MEMORANDUM

To:	Mr. Nathan Mustafa, P.E., T.E., AICP, City Traffic Engineer Mobility Planning Manager City of Riverside	Date:	August 2, 2019
From:	Richard E. Barretto, P.E., Principal Linscott, Law & Greenspan, Engineers	LLG Ref:	2.19.4086.1
cc:	Keil D. Maberry, P.E., LLG Shane S. Green, P.E., LLG		
Subject:	Northgate Market Progression Assessment		

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Linscott, Law & Greenspan, Engineers is pleased to present this memorandum that summarizes the results of a progression assessment which has been conducted along Magnolia Avenue within the vicinity of the proposed Northgate Market. This letter assesses the implications associated with the provision of a half signal and a full access signal on Magnolia Avenue at the Project site's existing access, which is now restricted to right-turn only movements.

PROJECT LOCATION AND DESCRIPTION

The project site is located at 10391 Magnolia Avenue, north of Magnolia Avenue and west of Tyler Street, in the City of Riverside, California. The subject property is a rectangular-shaped, 3.20± acre parcel of land that is now developed with a 41,145 square-foot (SF) building, formerly occupied by Toys R Us, and 218 parking spaces. ***Figure 1-1*** presents a Vicinity Map, which illustrates the general location of the Project and depicts the study locations and surrounding street system. ***Figure 2-1*** presents an aerial depiction of the existing site.

Figure 2-2 presents the proposed site plan for the proposed Project, prepared by LE Architecture. Review of the site plan indicates that the proposed Project will include a remodel of the existing building to accommodate Northgate Market.

Site Access Alternatives

To assess potential access opportunities and/or constraints, two (2) site access alternatives have been included in this analysis. These alternatives evaluate the potential impacts associated with allowing left-turn movements into the subject property based on the following intersection controls:

Philip M. Linscott, PE (1924-2000)
Jack M. Greenspan, PE (Ret.)
William A. Law, PE (Ret.)
Paul W. Wilkinson, PE
John P. Keating, PE
David S. Shender, PE
John A. Boarman, PE
Clare M. Look-Jaeger, PE
Richard E. Barretto, PE
Keil D. Maberry, PE

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- ***Alternative 1 - Half Signal***: Project driveway would be modified to allow for protected left-turn movements into the site with the installation of a half signal (outbound left-turns would be restricted).

- ***Alternative 2 - Full Access Signal***: Install a two-phase traffic signal to serve as access to the Project site as well as the existing commercial property located across Magnolia Avenue.

As part of the Project, it is assumed that the Project frontage will be widened to construct a dedicated westbound right-turn lane and that the existing median on Magnolia Avenue will be modified to provide a dedicated eastbound left-turn lane and/or westbound left-turn.

It is acknowledged that the City's preference is to maintain access to the project site as a right-turn in/out only driveway with the provision of eastbound U-turn movements at Tyler Street/Magnolia Avenue, and subsequently the removal of the southbound right-turn overlap phase at the intersection.

STUDY AREA

Eleven (11) key study intersections have been selected for evaluation based on review of the existing transportation system surrounding the proposed Project site. The eleven (11) key study intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic impact investigation.

Key Study Intersections

1. Polk Street at Magnolia Avenue
2. Shopping Center at Magnolia Avenue
3. Banbury Street at Magnolia Avenue
4. Tyler Street at Magnolia Avenue
5. Galleria West at Magnolia Avenue
6. Galleria East at Magnolia Avenue
7. Hole Avenue/Hughes Alley at Magnolia Avenue
8. Tyler Street at Hole Avenue
9. Tyler Street at Galleria North
10. Tyler Street at Galleria South
11. Project Driveway at Magnolia Avenue

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Figure 3-1 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this report. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key area study intersections.

The Level of Service (LOS) investigations at the eleven (11) key study intersections were used to evaluate the potential traffic-related impacts the proposed Project would have on the existing street system. Analysis has been completed for the following scenarios:

- Existing traffic conditions,
- Existing Plus Project traffic conditions with implementation of a half signal at the project driveway, and
- Existing Plus Project traffic conditions with implementation of a full signal at the project driveway. AG to 2021????

Traffic volumes used in this evaluation are based on the information published in the *Traffic Impact Analysis Report for the Northgate Markets Project, dated May 29, 2019,* which was prepared on-behalf of the Project Applicant, Northgate Gonzalez Real Estate Company.

Figures 3-2 and ***3-3*** illustrate the existing AM and PM peak hour traffic volumes at the eleven (11) key study intersections evaluated in this report, respectively.

Figures 4-1 and ***4-2*** present projected AM and PM peak hour traffic volumes at the eleven (11) key study intersections with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively, and assuming Alternative 1 access (Half Signal).

Figures 5-1 and ***5-2*** present projected AM and PM peak hour traffic volumes at the eleven (11) key study intersections with the addition of the trips generated by the proposed Project to existing traffic volumes, respectively, and assuming Alternative 2 access (Full Signal).

It should be noted that when developing the Synchro network under existing conditions, the existing lane geometrics, pocket lengths, and minimum pedestrian crossing timings have been used. Both the AM and PM peak hours have been optimized between 110 to 130 seconds. The half signal and full signal were integrated into the Synchro network with adjustments to timing and offset at only the project driveway, leaving the remaining ten (10) key study intersections unchanged. By not

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re-optimizing the system with installation of the half signal and full signal this ensures that the identified driveway improvements could be completed with minimal effect on the existing system.

PROGRESSION ASSESSMENT

A progression assessment was completed to determine if the installation of a two-phase traffic signal would impact the progression along Magnolia Avenue under Existing Plus Project traffic conditions.

Synchro 10.0 Method of Analysis

Synchro 10.0 analyzes intersection capacity, as well as progression/coordination operations along an arterial street. *Synchro 10.0* provides an alternative method for calculating intersection delays called the Percentile Delay Method. This method provides key benefits over Webster's formula, used by the Highway Capacity Manual, as it is able to model the following situations:

- Signals in coordination
- Actuated and semi-actuated signals
- Near saturation and super saturated signals

In a coordinated arterial network, *Synchro 10.0* calculates the progression factor and the effects of coordination. To optimize traffic progression along an arterial street, *Synchro 10.0* optimizes splits and offsets to reduce vehicular delays. This makes *Synchro's* timing plans similar to *TRANSYT*, which optimizes to reduce stops and delays. *PASSER-II 90* and other arterial software optimize to maximize the arterial bandwidth.

As such, utilizing the calculated green splits, phase sequences, and coordination offsets, *Synchro 10.0* produces generated solutions with minimal delays and good arterial progression for the given geometric, traffic, and signal control conditions. The generated progression solutions are typically evaluated based on the following measures of effectiveness:

- **Band A/B:** The "A" and "B" direction bandwidths (in seconds) indicate the period of time available for traffic to flow in the northerly and southerly directions along Beach Boulevard within the band from one end of the arterial to the other intersections.

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- **Efficiency:** The average fraction of the cycle used for progression, ranging from 0.00 to 0.50. Efficiency values for a desirable progression should preferably be greater than 0.25, however efficiency values greater than 0.13 are acceptable. Efficiency is calculated based on the following formula:
  - **Efficiency** = (Band A + Band B) / (2 * Cycle Length)

Table 1 summarizes the measures of effectiveness criteria, as detailed above.

Progression Analysis Results

Table 2 summarizes the peak period progression analysis results for Existing Plus Project traffic conditions. The Efficiency values are reported in column (1) while column (2) reports the respective bandwidths for the eastbound and westbound directions. Column (3) reports the progression results.

As shown in row one (1), traffic signal progression along Magnolia Avenue in the eastbound and westbound directions is "fair" during the AM and PM peak hours for Existing traffic conditions.

As shown in row two (2), traffic signal progression along Magnolia Avenue in the eastbound and westbound directions is "fair" during the AM and PM peak hours for Existing Plus Project traffic conditions with implementation of a half signal (Alternative 1) at the project driveway. Review of *Table 2* shows that direct comparison of the half signal option to existing conditions would result in no changes to the bandwidth as well as no changes to the progression result of "Fair".

As shown in row three (3), traffic signal progression along Magnolia Avenue in the eastbound and westbound directions is "fair" during the AM and PM peak hours for Existing Plus Project traffic conditions with implementation of a full signal (Alternative 2) at the project driveway. Review of *Table 2* shows that direct comparison of the full signal option to existing conditions would result in minimal changes to the bandwidth as well as no changes to the progression result of "Fair".

Appendix A presents the Synchro 10.0 time-space diagrams for the progression analysis.

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LEVEL OF SERVICE ANALYSIS

In addition to the progression assessment level of service has been completed. ***Table 3*** summarizes the peak hour level of service results at the eleven (11) key study intersections for Existing Plus Project traffic conditions.

The first column (1) of HCM/LOS values in *Table 3* presents Existing traffic conditions based on existing intersection geometry without any traffic generated from the proposed project. The second column (2) presents the forecasted Existing Plus Project traffic conditions with the addition of project traffic and implementation of a half signal at the project driveway. The third column (3) indicates whether the traffic associated with the Project will have a significant impact based on the City's impact criteria. The fourth column (4) indicates the anticipated operating conditions with implementation of improvements recommended to mitigate Project traffic and/or achieve an acceptable Level of Service, if any.

The fifth column (5) presents the forecasted Existing Plus Project traffic conditions with the addition of project traffic and implementation of a full signal at the project driveway. The sixth column (6) indicates whether the traffic associated with the Project will have a significant impact based on the City's significant impact criteria. The seventh column (7) indicates the anticipated operating conditions with implementation of recommended improvements, if any.

Existing Plus Project Traffic Conditions

Review of columns 2 and 3 of *Table 3* indicates that traffic associated with the proposed Project and implementation of a half signal at the project driveway will not significantly impact any of the eleven (11) key study intersections, when compared to the City's LOS standards and significant impact criteria. All eleven (11) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of a half signal at the project driveway. It should be noted that the changes to the service levels are considered minimal.

Review of columns 5 and 6 of *Table 3* indicates that traffic associated with the proposed Project and implementation of a full signal at the project driveway will not significantly impact any of the eleven (11) key study intersections, when compared to the City's LOS standards and significant impact criteria. All eleven (11) key study intersections are forecast to continue to operate at an acceptable service level during the AM and PM peak hours with the addition of a half signal at the project driveway. It should be noted that the changes to the service levels are considered minimal.

Appendix B presents the Synchro level of service worksheets.

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QUEUING ASSESSMENT

A queuing assessment has been completed to validate the left-turn pocket lengths and through movements along Magnolia Avenue between Banbury Street and Tyler Street. This queuing analysis is based on *Synchro 10.0 SimTraffic* and was conducted to ensure that adequate storage lengths would still be provided with implementation of the half signal and full signal at the project driveway.

Table 4 summarizes the AM and PM peak hour queuing results for Existing Plus Project traffic conditions with the addition of the half signal and full signal at the project driveway. The first column (1) in *Table 4* presents Existing traffic conditions based on existing intersection geometry without any traffic generated from the proposed project. The second column (2) presents the forecasted Existing Plus Project traffic conditions with the addition of project traffic and implementation of a half signal at the project driveway. The third column (3) presents the forecasted Existing Plus Project traffic conditions with the addition of project traffic and implementation of a full signal at the project driveway.

Review of *Table 4* shows that the implementation of either the half signal or full signal at the project driveway would result in adequate queues with the exception of the westbound left-turn lane at Banbury Street/Magnolia Avenue. Under the PM peak hour, the queues associated with both the half signal and full signal at Banbury Street/Magnolia Avenue exceed the provided storage capacity. It should be noted that the existing pocket could be lengthened to accommodate the projected queues; however, doing so would require median modifications and the potential relocation of an existing power pole.

Although the PM peak hour eastbound left-turn queues at Tyler Street/Magnolia Avenue for both the half signal and full signal exceed the provided storage capacity, the transition area has enough capacity to accommodate the spillover queues.

It should also be noted that for the purposes of this analysis, the eastbound left-turn storage capacity at the Project Driveway/Magnolia Avenue has been assumed to be 100-feet. Upon construction of the proposed Project, the pocket should be lengthened to accommodate the anticipated queues associated with the proposed Project. ***Appendix C*** presents the *SimTraffic* queueing worksheets.

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CONCLUSION

Based on the information provided above, the installation of a half signal or a full signal at the project driveway would have a nominal effect on progression and nominal effect on service levels. Signal spacing is considered adequate with minimal through movement queuing along Magnolia Avenue between Banbury Street and Tyler Street. It should be noted that the westbound left-turn pocket at Banbury Street/Magnolia Avenue would require median modifications to accommodate the anticipated queues. As a result the removal/relocation of a power pole and other above-ground utilities would be required.

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Please call us at (949) 825-6175 if you have any questions.

Attachments

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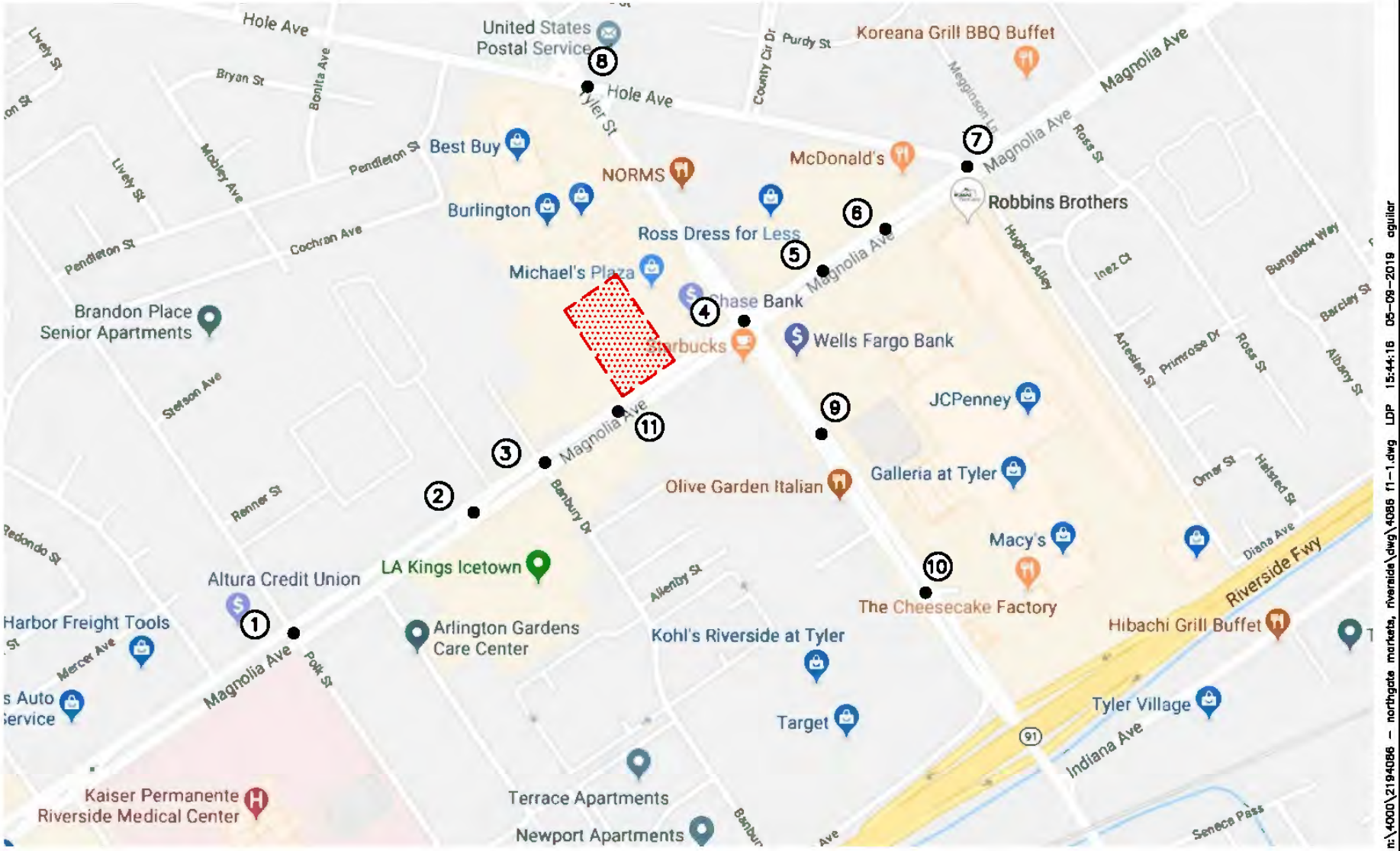

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N NO SCALE

SOURCE: GOOGLE

KEY

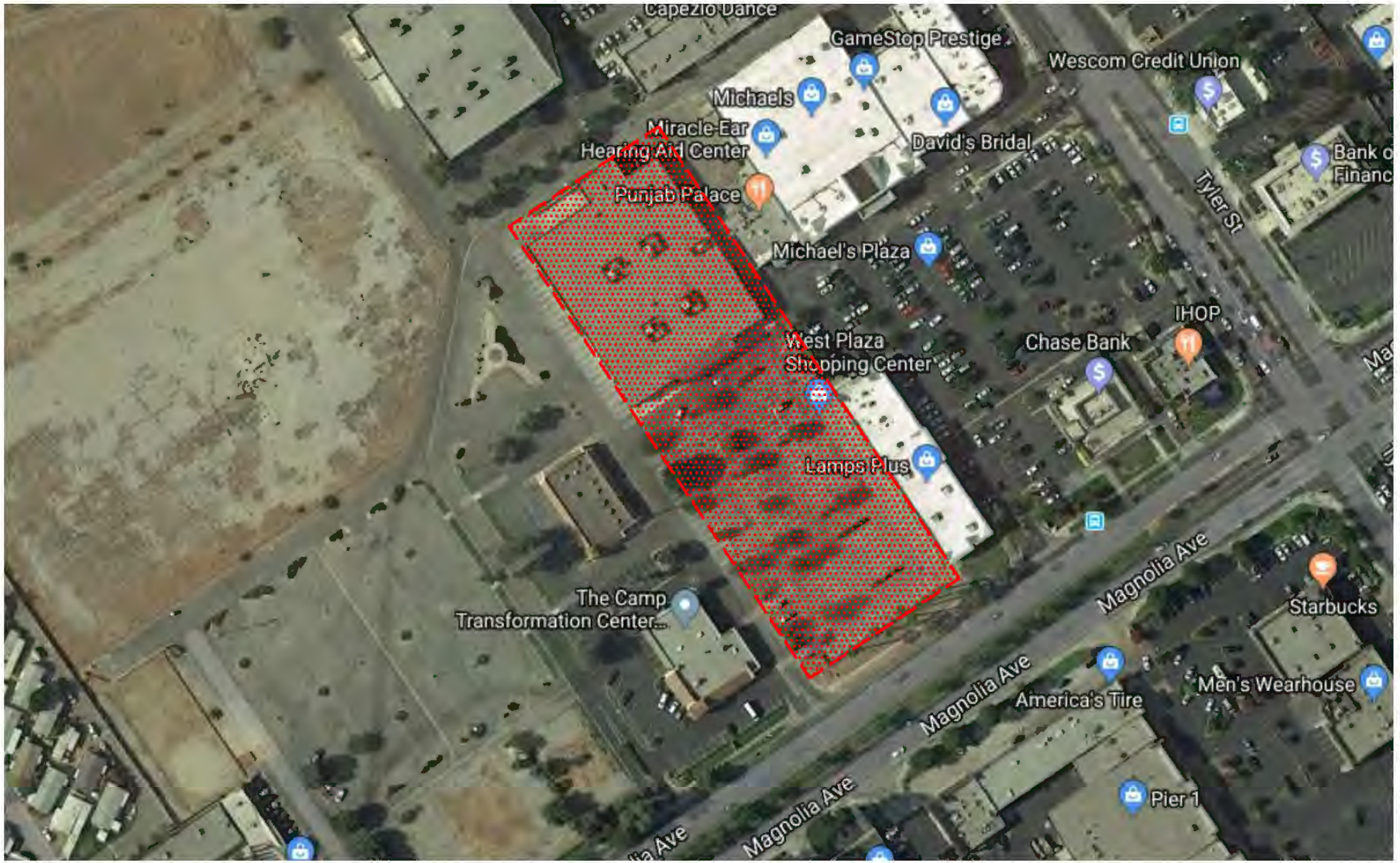
(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 1–1

VICINITY MAP

NORTHGATE MARKET, RIVERSIDE



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SOURCE: GOOGLE

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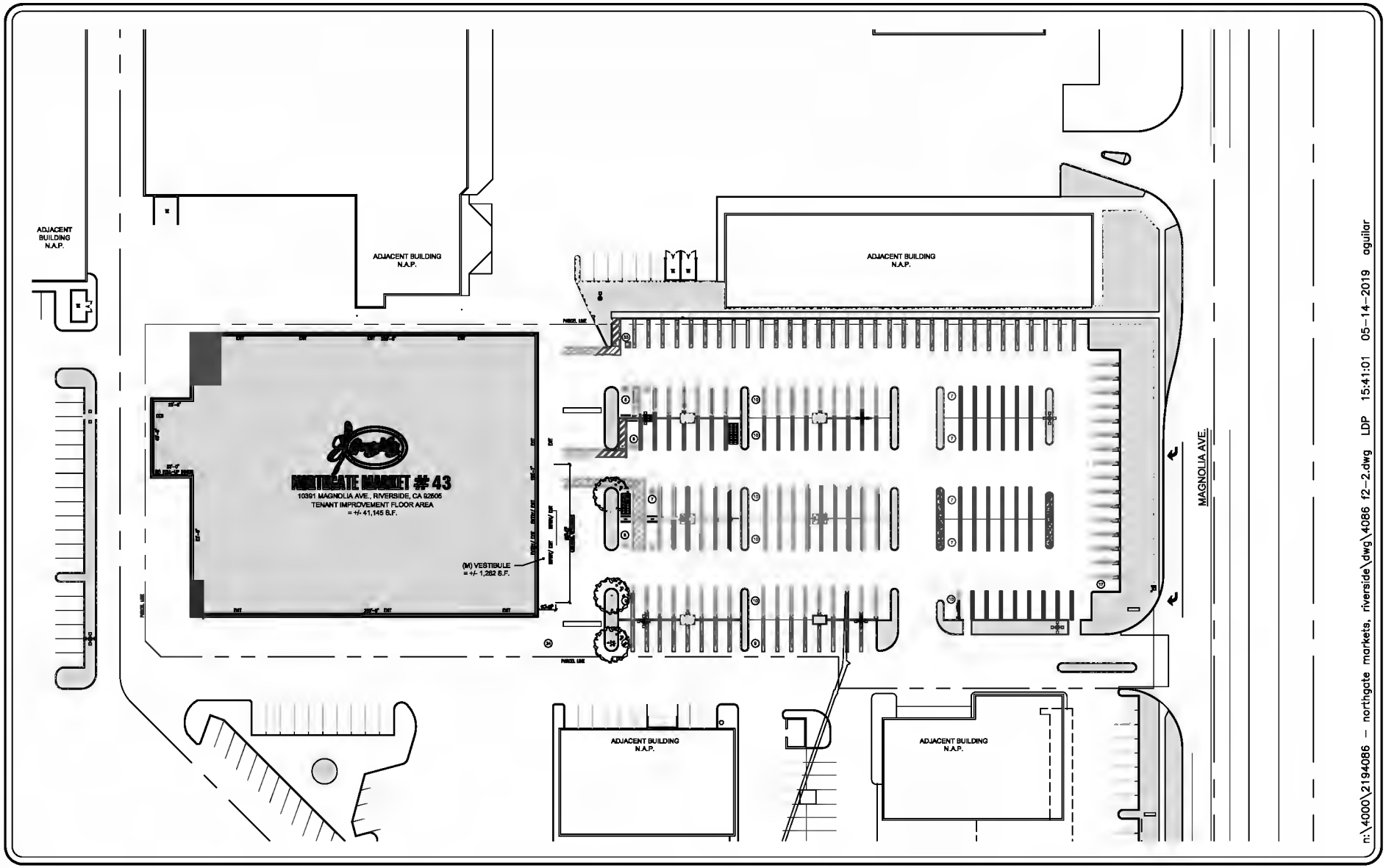
= PROJECT SITE

FIGURE 2-1

EXISTING AERIAL SITE PLAN

NORTHGATE MARKET, RIVERSIDE



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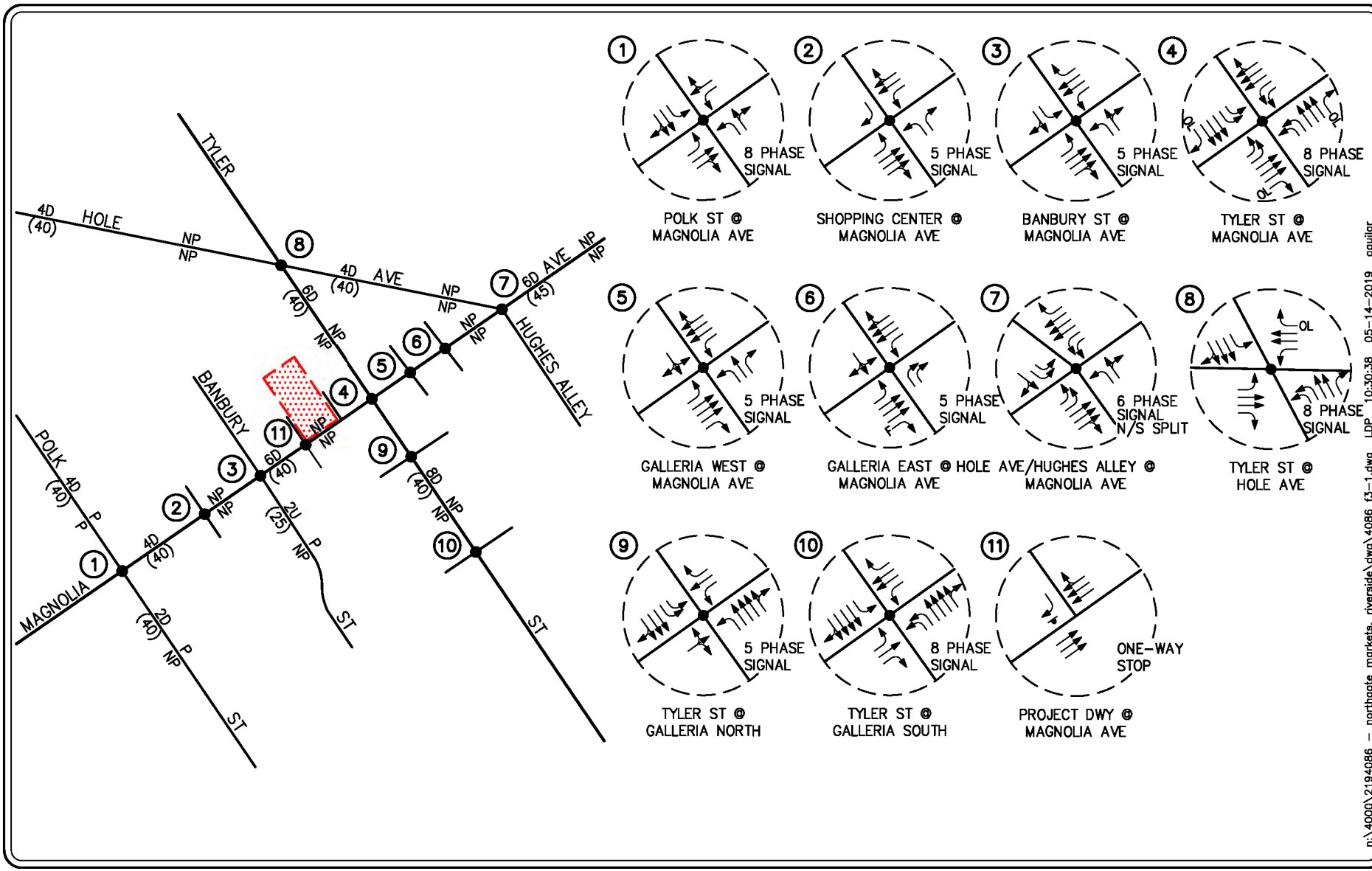
SOURCE: LE ARCHITECTURE

FIGURE 2-2

PROPOSED SITE PLAN

NORTHGATE MARKET, RIVERSIDE



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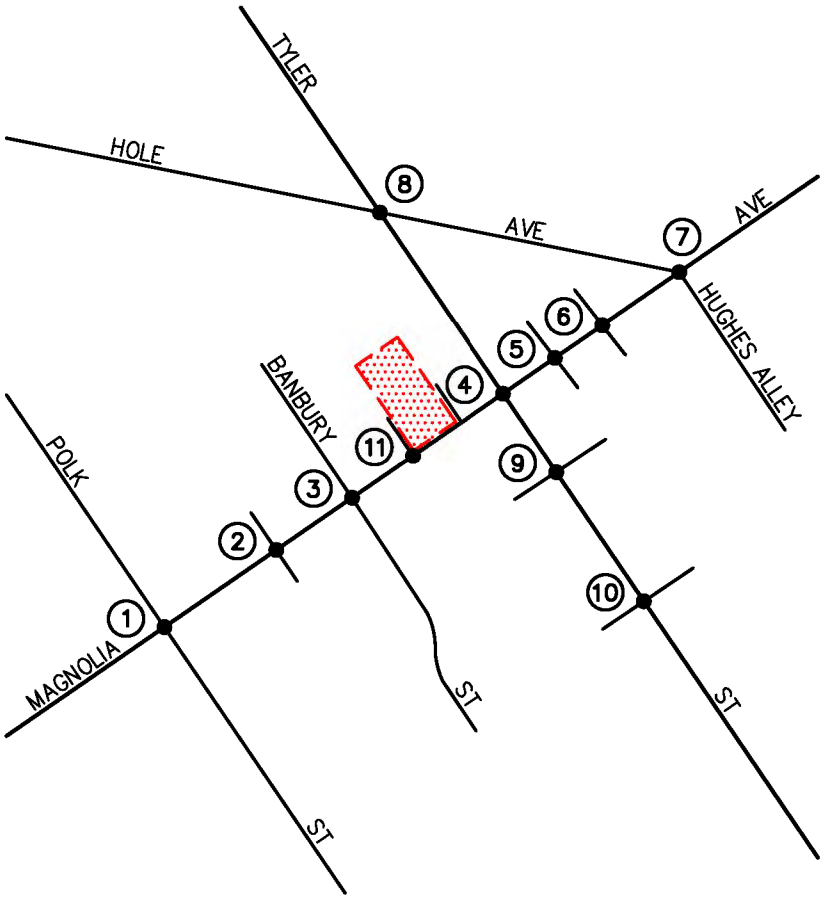
KEY

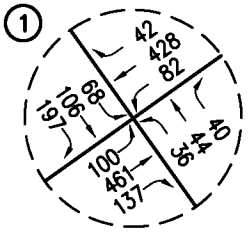
(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ▼ = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX)= POSTED SPEED LIMIT (MPH)
F = FREE-RIGHT
OL = OVERLAP
= PROJECT SITE

FIGURE 3-1

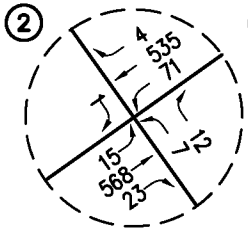
EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

NORTHGATE MARKET, RIVERSIDE

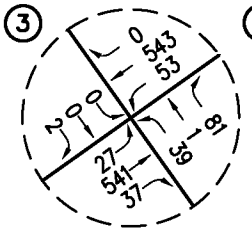




POLK ST @
MAGNOLIA AVE



SHOPPING CENTER @
MAGNOLIA AVE



BANBURY ST @
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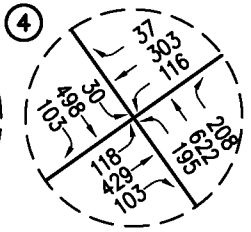

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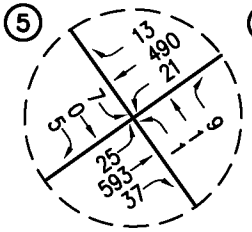

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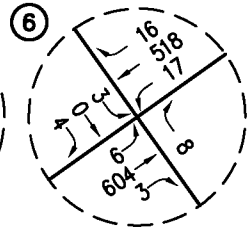

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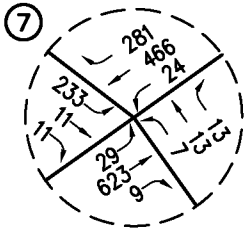
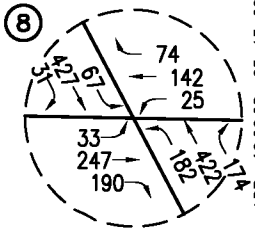


HOLE AVE/HUGHES ALLEY @
MAGNOLIA AVE



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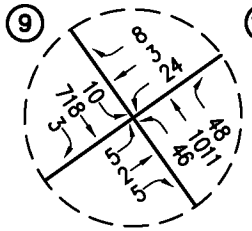
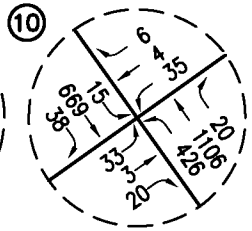
HOLE AVE



TYLER ST @
GALLERIA NORTH



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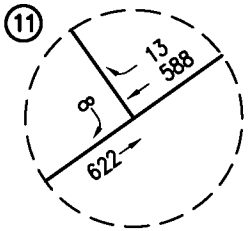

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engineers

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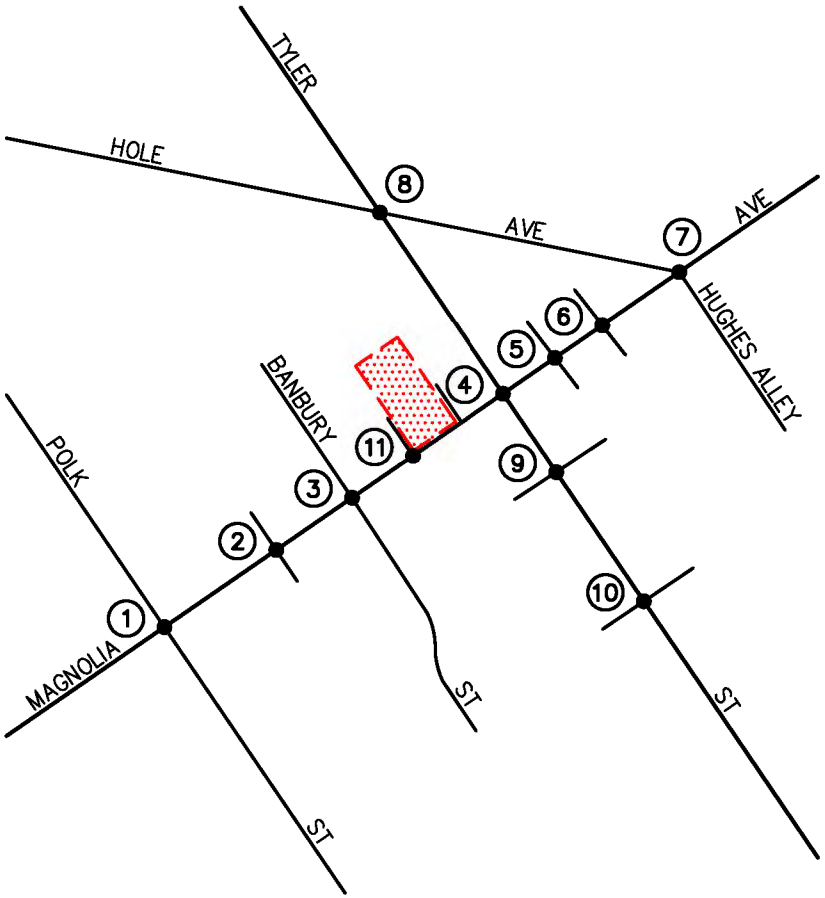
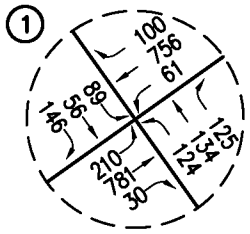
FIGURE 3-2

EXISTING AM PEAK HOUR TRAFFIC VOLUMES

NORTHGATE MARKET, RIVERSIDE





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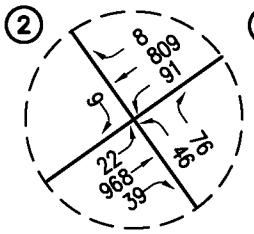

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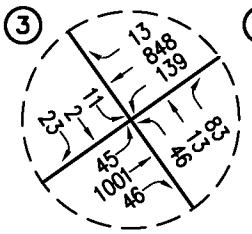

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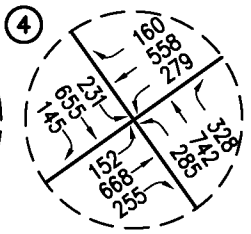

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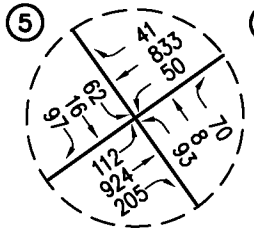

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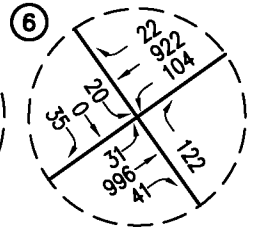

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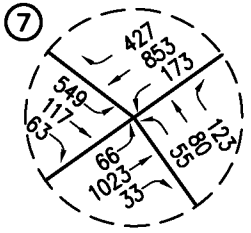
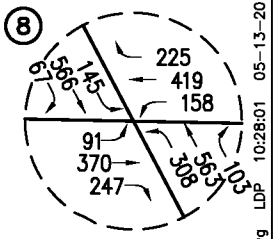


HOLE AVE/HUGHES ALLEY @
MAGNOLIA AVE



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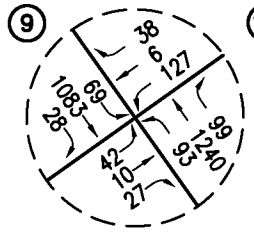
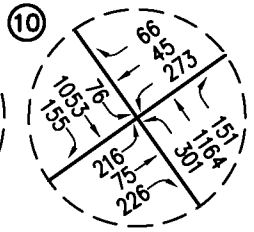
HOLE AVE



TYLER ST @
GALLERIA NORTH



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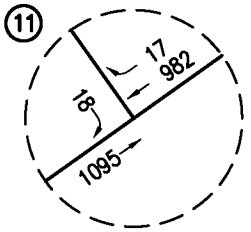

PROJECT DWY @
MAGNOLIA AVE

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engineers

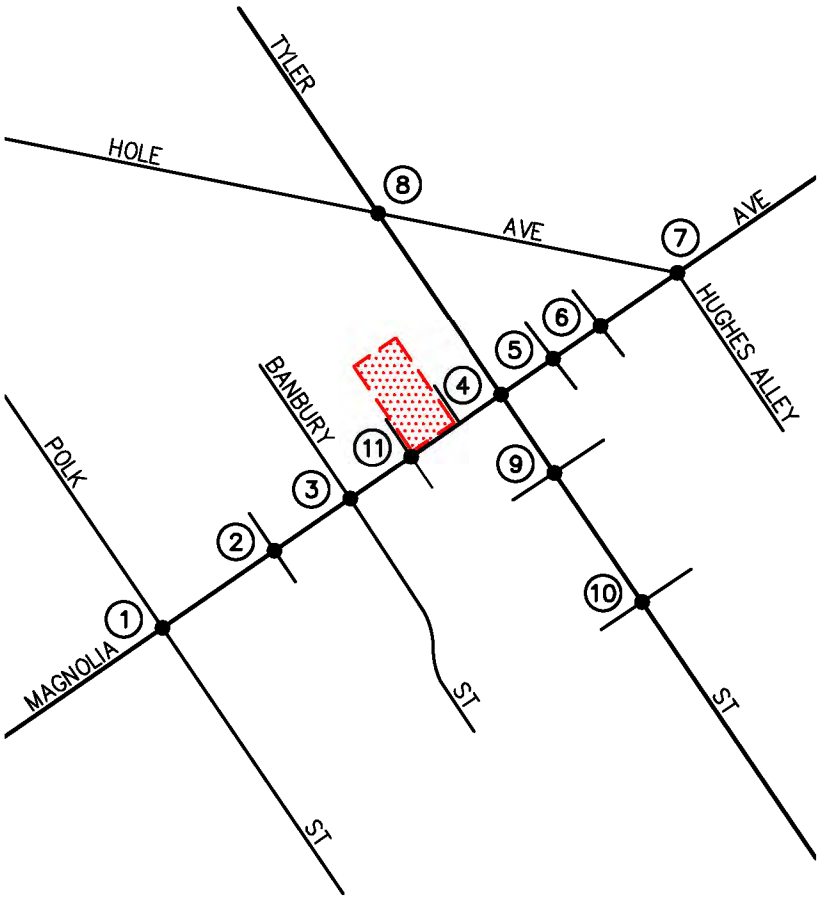
N NO SCALE

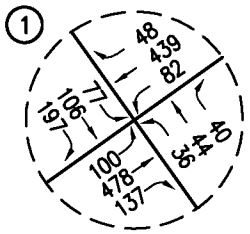
KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 3-3

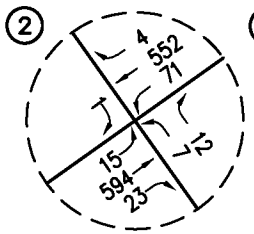
EXISTING PM PEAK HOUR TRAFFIC VOLUMES

NORTHGATE MARKET, RIVERSIDE

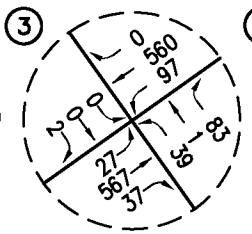




POLK ST @
MAGNOLIA AVE



SHOPPING CENTER @
MAGNOLIA AVE



BANBURY ST @
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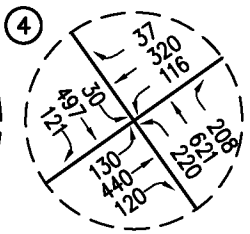

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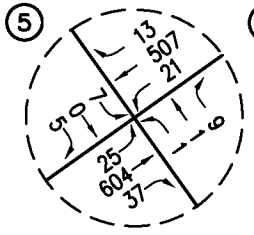

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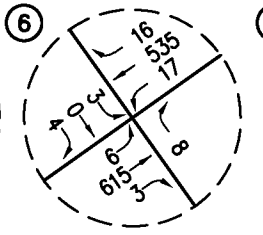
MAGNOLIA AVE



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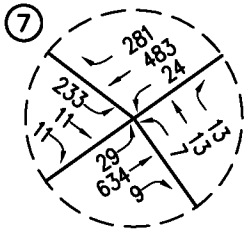
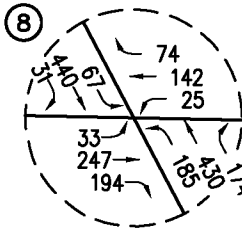
MAGNOLIA AVE



HOLE AVE/HUGHES ALLEY @
MAGNOLIA AVE



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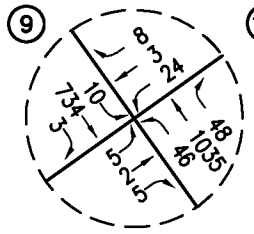
HOLE AVE



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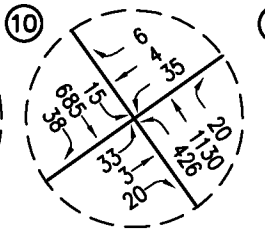
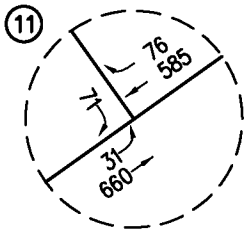
GALLERIA NORTH



TYLER ST @
GALLERIA SOUTH



PROJECT DWY @
MAGNOLIA AVE

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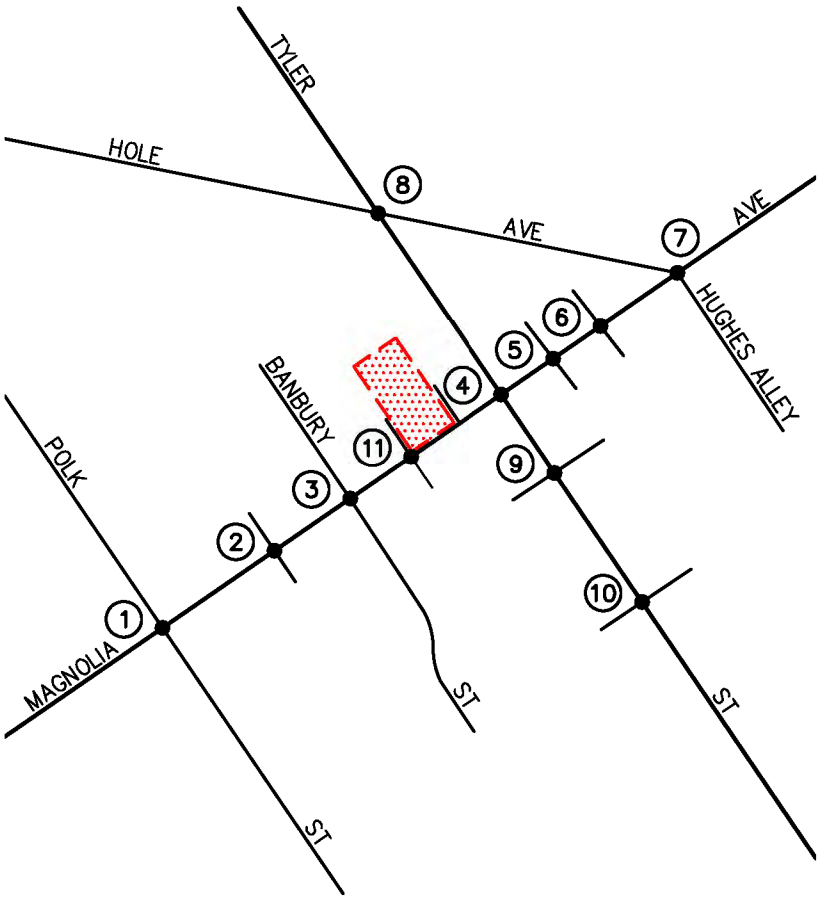
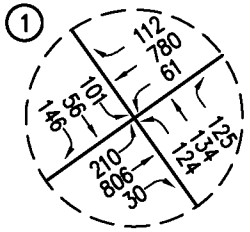
N
NO SCALE

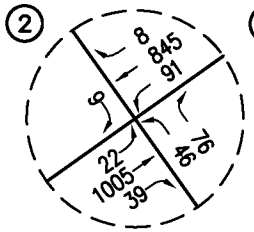
KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 4-1
ALTERNATIVE 1 (HALF SIGNAL)
EXISTING PLUS PROJECT
AM PEAK HOUR TRAFFIC VOLUMES
NORTHGATE MARKET, RIVERSIDE

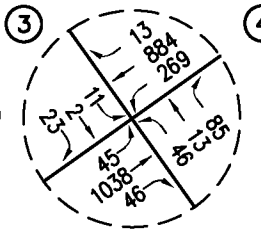




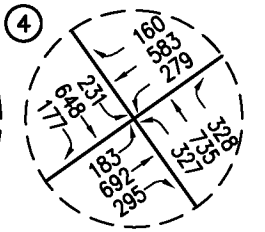
POLK ST @
MAGNOLIA AVE



SHOPPING CENTER @
MAGNOLIA AVE



BANBURY ST @
MAGNOLIA AVE



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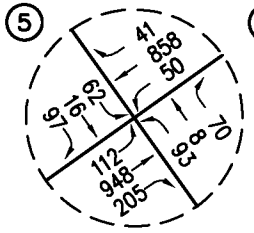
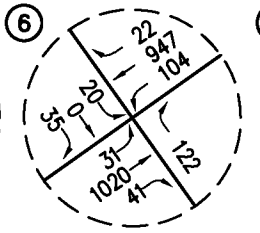


GALLERIA WEST @
MAGNOLIA AVE



GALLERIA EAST @
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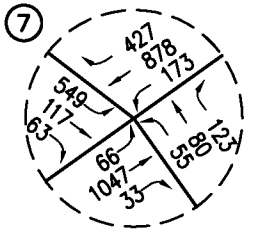
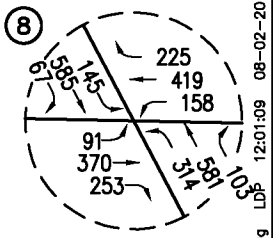


HOLE AVE/HUGHES ALLEY @
MAGNOLIA AVE



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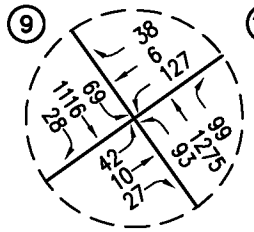
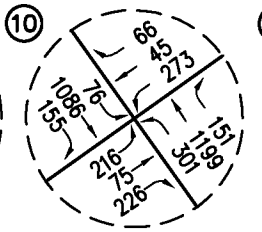


TYLER ST @
GALLERIA NORTH



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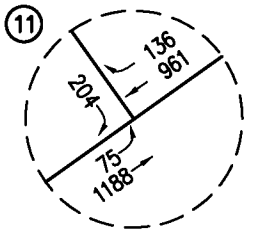

PROJECT DWY @
MAGNOLIA AVE

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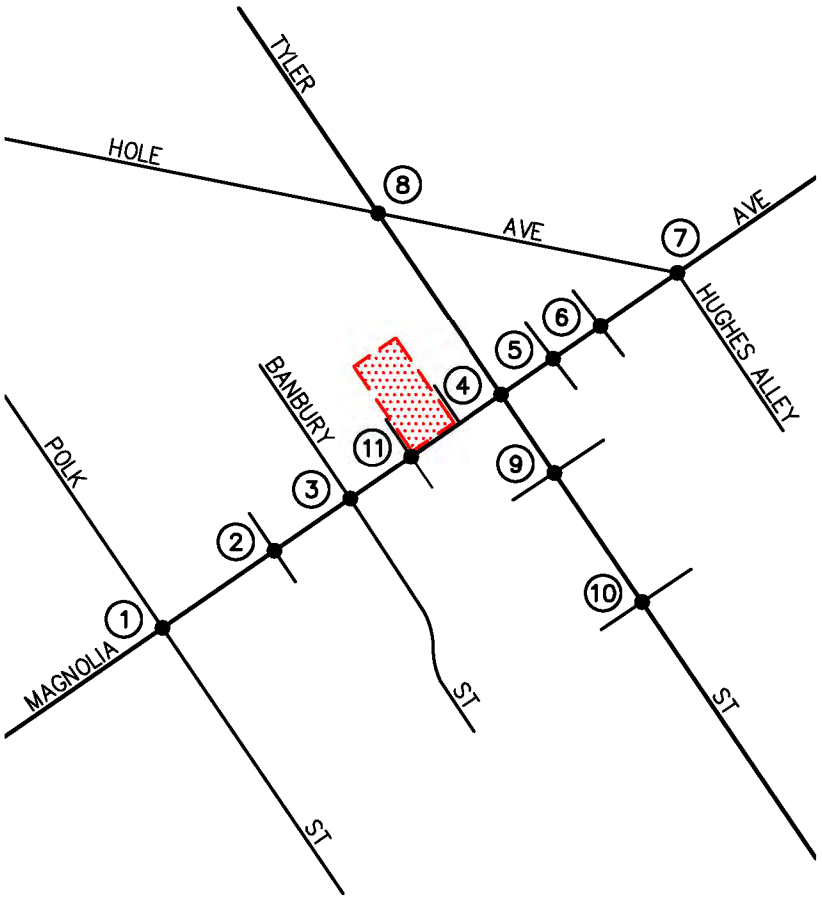
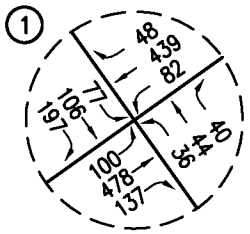
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 4-2
ALTERNATIVE 1 (HALF SIGNAL) EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES
NORTHGATE MARKET, RIVERSIDE





POLK ST @
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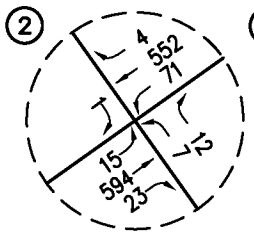

SHOPPING CENTER @
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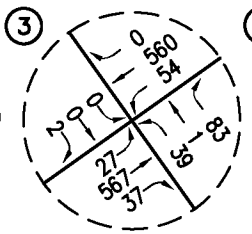
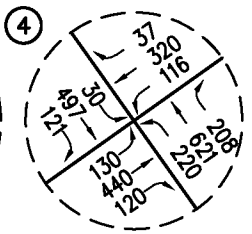


BANBURY ST @
MAGNOLIA AVE



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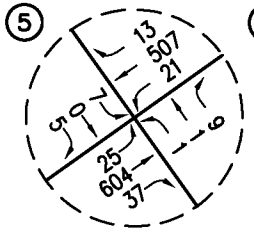
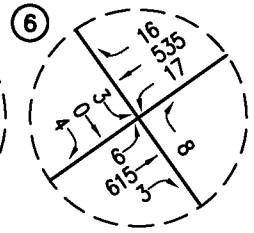
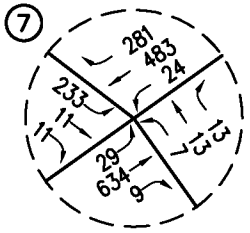


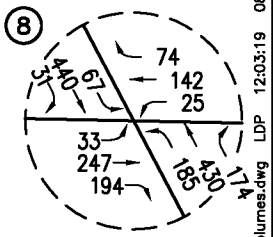
GALLERIA WEST @
MAGNOLIA AVE



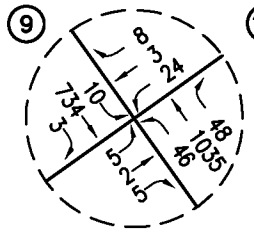
GALLERIA EAST @
MAGNOLIA AVE



HOLE AVE/HUGHES ALLEY @
MAGNOLIA AVE



TYLER ST @
HOLE AVE



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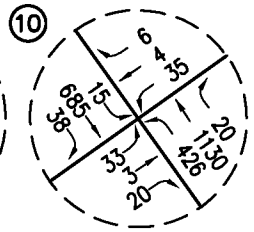

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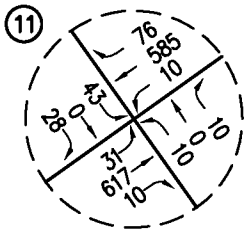

PROJECT DWY @
MAGNOLIA AVE

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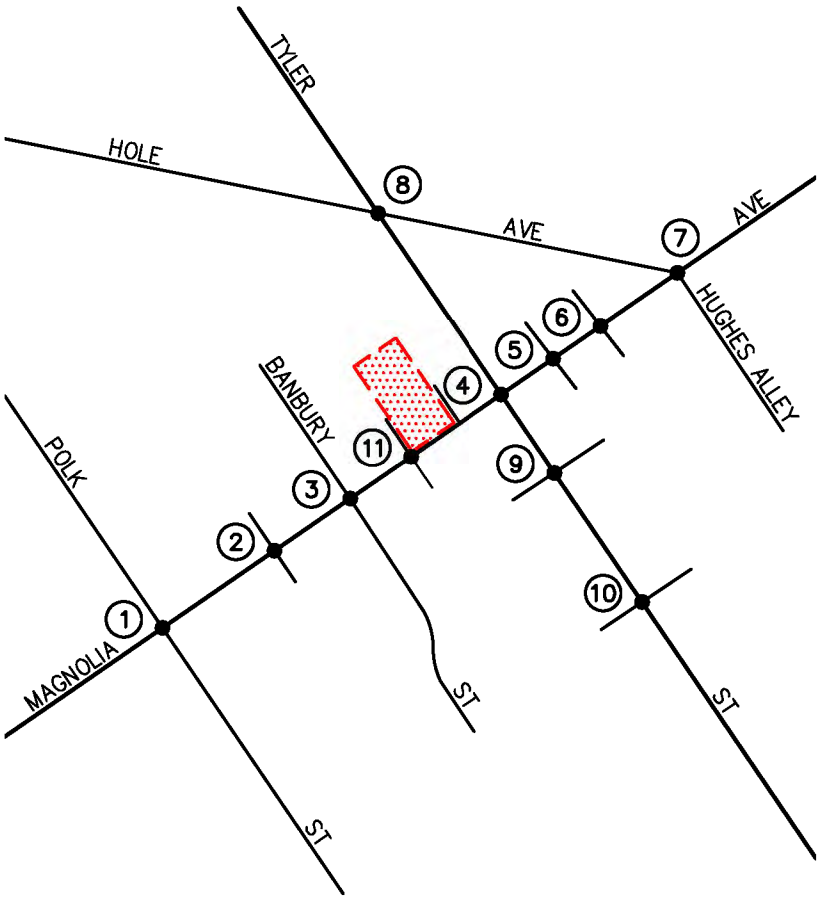
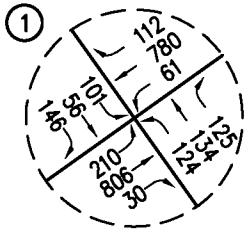
engineers

N NO SCALE

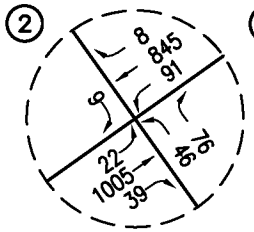
KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 5-1
ALTERNATIVE 2 (FULL SIGNAL) EXISTING PLUS PROJECT AM PEAK HOUR TRAFFIC VOLUMES
NORTHGATE MARKET, RIVERSIDE

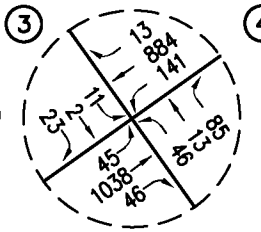




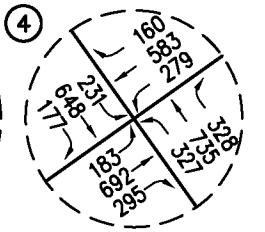
POLK ST @
MAGNOLIA AVE



SHOPPING CENTER @
MAGNOLIA AVE



BANBURY ST @
MAGNOLIA AVE



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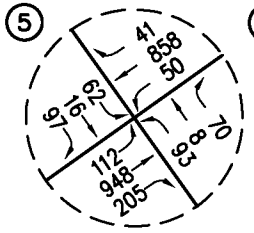
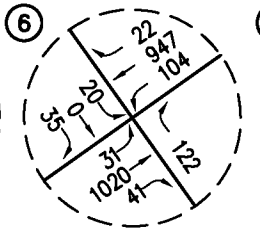


GALLERIA WEST @
MAGNOLIA AVE



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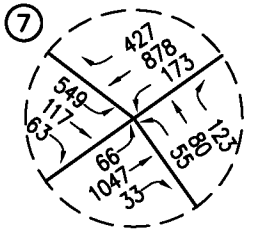
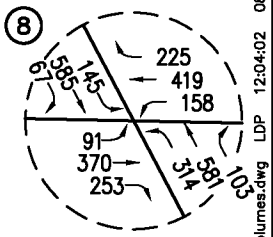
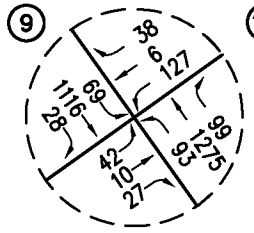
MAGNOLIA AVE



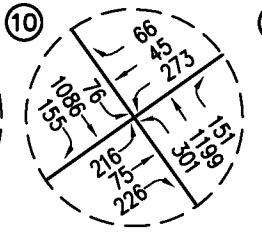
HOLE AVE/HUGHES ALLEY @
MAGNOLIA AVE



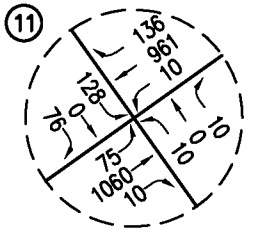
TYLER ST @
HOLE AVE



TYLER ST @
GALLERIA NORTH



TYLER ST @
GALLERIA SOUTH



PROJECT DWY @
MAGNOLIA AVE

n:\4000\2194086 - northgate markets, riverside\dwg\4086 f5-2 volumes.dwg LDP 12:04:02 08-02-2019 co

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 5-2

ALTERNATIVE 2 (FULL SIGNAL) EXISTING PLUS PROJECT PM PEAK HOUR TRAFFIC VOLUMES

NORTHGATE MARKET, RIVERSIDE

LINSCOTT LAW & GREENSPAN engineers

TABLE 1
EFFICIENCY CRITERIA FOR PROGRESSION[1]

Efficiency	Description
0.00 – 0.12	Poor Progression
0.13 – 0.24	Fair Progression
0.25 – 0.36	Good Progression
0.37 – 1.00	Great Progression

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[1] Source: *PASSER II-90 Program User's Guide* (June 1991, Texas Transportation Institute).

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TABLE 2
MAGNOLIA AVENUE SIGNAL PROGRESSION SUMMARY[2]

Scenario Description	Time Period	(1) Efficiency	(2) Bandwidth (seconds)		(3) Progression Results
			EB	WB	
(1) Existing Traffic Conditions	AM	0.22	21	27	Fair
	PM	0.24	26	26	Fair
(2) Half Signal Option Existing Plus Project Traffic Conditions	AM	0.22	21	27	Fair
	PM	0.24	26	26	Fair
(3) Full Signal Option Existing Plus Project Traffic Conditions	AM	0.16	21	14	Fair
	PM	0.17	15	23	Fair

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[2] Source: *Synchro 10.0*, Percentile Delay Methodology.

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TABLE 3

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions (Half Signal)		(3) Significant Impact	(4) Existing Plus Project Traffic Conditions (Half Signal) W/Improvements		(5) Existing Plus Project Traffic Conditions (Full Signal)		(6) Significant Impact	(7) Existing Plus Project Traffic Conditions (Full Signal) W/Improvements	
		HCM	LOS	HCM	LOS	Yes/No	HCM	LOS	HCM	LOS	Yes/No	HCM	LOS
1. Polk Street at	AM	32.4 s/v	C	32.6 s/v	C	No	--	--	32.6 s/v	C	No	--	--
Magnolia Avenue	PM	36.5 s/v	C	37.1 s/v	D	No	--	--	37.1 s/v	D	No	--	--
2. Shopping Center at	AM	12.5 s/v	B	12.6 s/v	B	No	--	--	12.6 s/v	B	No	--	--
Magnolia Avenue	PM	14.8 s/v	B	14.8 s/v	B	No	--	--	14.8 s/v	B	No	--	--
3. Banbury Street at	AM	20.3 s/v	C	22.4 s/v	C	No	--	--	20.3 s/v	C	No	--	--
Magnolia Avenue	PM	17.8 s/v	B	27.2 s/v	C	No	--	--	21.0 s/v	C	No	--	--
4. Tyler Street at	AM	40.2 s/v	D	39.2 s/v	D	No	--	--	37.9 s/v	D	No	--	--
Magnolia Avenue	PM	34.5 s/v	C	36.1 s/v	D	No	--	--	32.9 s/v	C	No	--	--
5. Galleria West at	AM	4.3 s/v	A	4.2 s/v	A	No	--	--	4.2 s/v	A	No	--	--
Magnolia Avenue	PM	14.1 s/v	B	14.1 s/v	B	No	--	--	14.1 s/v	B	No	--	--
6. Galleria East at	AM	12.5 s/v	B	12.5 s/v	B	No	--	--	12.5 s/v	B	No	--	--
Magnolia Avenue	PM	15.2 s/v	B	15.3 s/v	B	No	--	--	15.3 s/v	B	No	--	--
7. Hole Avenue/Hughes Alley at	AM	22.7 s/v	C	22.6 s/v	C	No	--	--	22.6 s/v	C	No	--	--
Magnolia Avenue	PM	38.1 s/v	D	38.0 s/v	D	No	--	--	38.0 s/v	D	No	--	--
8. Tyler Street at	AM	37.8 s/v	D	38.7 s/v	D	No	--	--	38.7 s/v	D	No	--	--
Hole Avenue	PM	39.4 s/v	D	39.7 s/v	D	No	--	--	39.7 s/v	D	No	--	--

Notes:

- LOS = Level of Service
- s/v = seconds per vehicle

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TABLE 3 (CONTINUED)

EXISTING PLUS PROJECT PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions (Half Signal)		(3) Significant Impact	(4) Existing Plus Project Traffic Conditions (Half Signal) W/Improvements		(5) Existing Plus Project Traffic Conditions (Full Signal)		(6) Significant Impact	(7) Existing Plus Project Traffic Conditions (Full Signal) W/Improvements	
		HCM	LOS	HCM	LOS	Yes/No	HCM	LOS	HCM	LOS	Yes/No	HCM	LOS
9. Tyler Street at Galleria North	AM	15.3 s/v	B	15.4 s/v	B	No	--	--	7.1 s/v	A	No	--	--
	PM	20.7 s/v	C	20.8 s/v	C	No	--	--	20.8 s/v	C	No	--	--
10. Tyler Street at Galleria South	AM	29.4 s/v	C	29.6 s/v	C	No	--	--	29.6 s/v	C	No	--	--
	PM	41.1 s/v	D	41.3 s/v	D	No	--	--	41.3 s/v	D	No	--	--
11. Project Driveway at Magnolia Avenue	AM	11.6 s/v	B	5.7 s/v	A	No	--	--	14.5 s/v	B	No	--	--
	PM	13.7 s/v	B	8.0 s/v	A	No	--	--	12.7 s/v	B	No	--	--

Notes:

- LOS = Level of Service
- s/v = seconds per vehicle

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TABLE 4
MAGNOLIA AVENUE PEAK HOUR QUEUING ANALYSIS[3]

Key Study Intersection	Storage Provided (feet)	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions (Half Signal)				(4) Existing Plus Project Traffic Conditions (Full Signal)			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes/No)
3. Banbury Street at Magnolia Avenue													
Westbound Left-Turn	135’	86’	Yes	176’	Yes[4]	128’	Yes	**230’**	**No[5]**	112’	Yes	**224’**	**No[5]**
Westbound Through	470’	144’	Yes	255’	Yes	119’	Yes	393’	Yes	254’	Yes	358’	Yes
4. Tyler Street at Magnolia Avenue													
Eastbound Left-Turn	125’	95’	Yes	92’	Yes	96’	Yes	144’	Yes[4]	111’	Yes	131’	Yes[4]
Eastbound Through	585’	73’	Yes	124’	Yes	76’	Yes	118’	Yes	75’	Yes	142’	Yes
11. Project Driveway at Magnolia Avenue													
Northbound Left/Through/Right-Turn	130’	--	--	--	--	--	--	--	--	38’	Yes	42’	Yes
Southbound Left/Through/Right-Turn	200’	--	--	--	--	--	--	--	--	64’	Yes	152’	Yes
Southbound Right-Turn	200’	30’	Yes	42’	Yes	47’	Yes	134’	Yes	--	--	--	--
Eastbound Left-Turn	100’	--	--	--	--	67’	Yes	100’	Yes	72’	Yes	170’	Yes[6]
Eastbound Through	470’	--	--	--	--	--	--	--	--	163’	Yes	336’	Yes
Westbound Left-Turn	100’	--	--	--	--	--	--	--	--	28’	Yes	24’	Yes
Westbound Through	585’	--	--	--	--	92’	Yes	122’	Yes	160’	Yes	159’	Yes
Westbound Right-Turn	100’	--	--	--	--	37’	Yes	36’	Yes	50’	Yes	45’	Yes

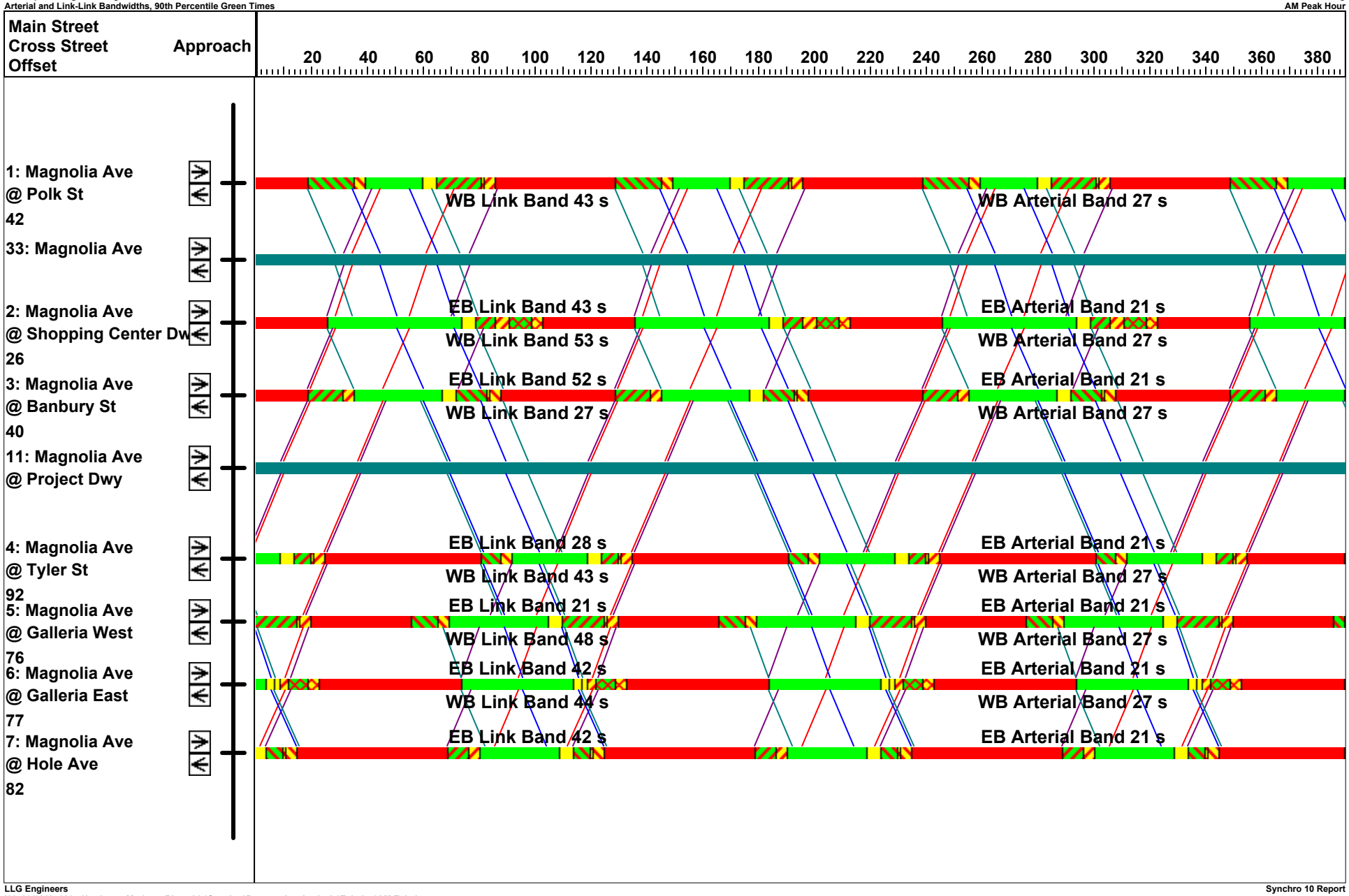
3 Queues are based on *SimTraffic* 95th Percentile methodology.
4 Although the anticipated queue exceeds the striped storage capacity, the transition area has enough capacity to accommodate the spillover queues.
5 The anticipated queues exceed the provided storage capacity. The existing pocket can be lengthened to accommodate the projected queues; however, it would require median modifications and the potential removal/relocation of an existing power pole.
6 For the purposes of this analysis the eastbound left-turn storage capacity has been assumed to be 100-feet. However, upon construction of the proposed Project the left-turn pocket should be lengthened to accommodate the projected queues.

APPENDIX A

PROGRESSION ANALYSIS WORKSHEETS

APPENDIX A-I

EXISTING TRAFFIC CONDITIONS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Cross Street
Approach
Offset
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1: Magnolia Ave
@ Polk St
42
33: Magnolia Ave
2: Magnolia Ave
@ Shopping Center Dw
26
3: Magnolia Ave
@ Banbury St
40
11: Magnolia Ave
@ Project Dwy
4: Magnolia Ave
@ Tyler St
92
5: Magnolia Ave
@ Galleria West
76
6: Magnolia Ave
@ Galleria East
77
7: Magnolia Ave
@ Hole Ave
82
WB Link Band 43 s
WB Arterial Band 27 s
EB Link Band 43 s
EB Arterial Band 21 s
WB Link Band 53 s
WB Arterial Band 27 s
EB Link Band 52 s
EB Arterial Band 21 s
WB Link Band 27 s
WB Arterial Band 27 s
EB Link Band 28 s
EB Arterial Band 21 s
WB Link Band 43 s
WB Arterial Band 27 s
EB Link Band 21 s
EB Arterial Band 21 s
WB Link Band 48 s
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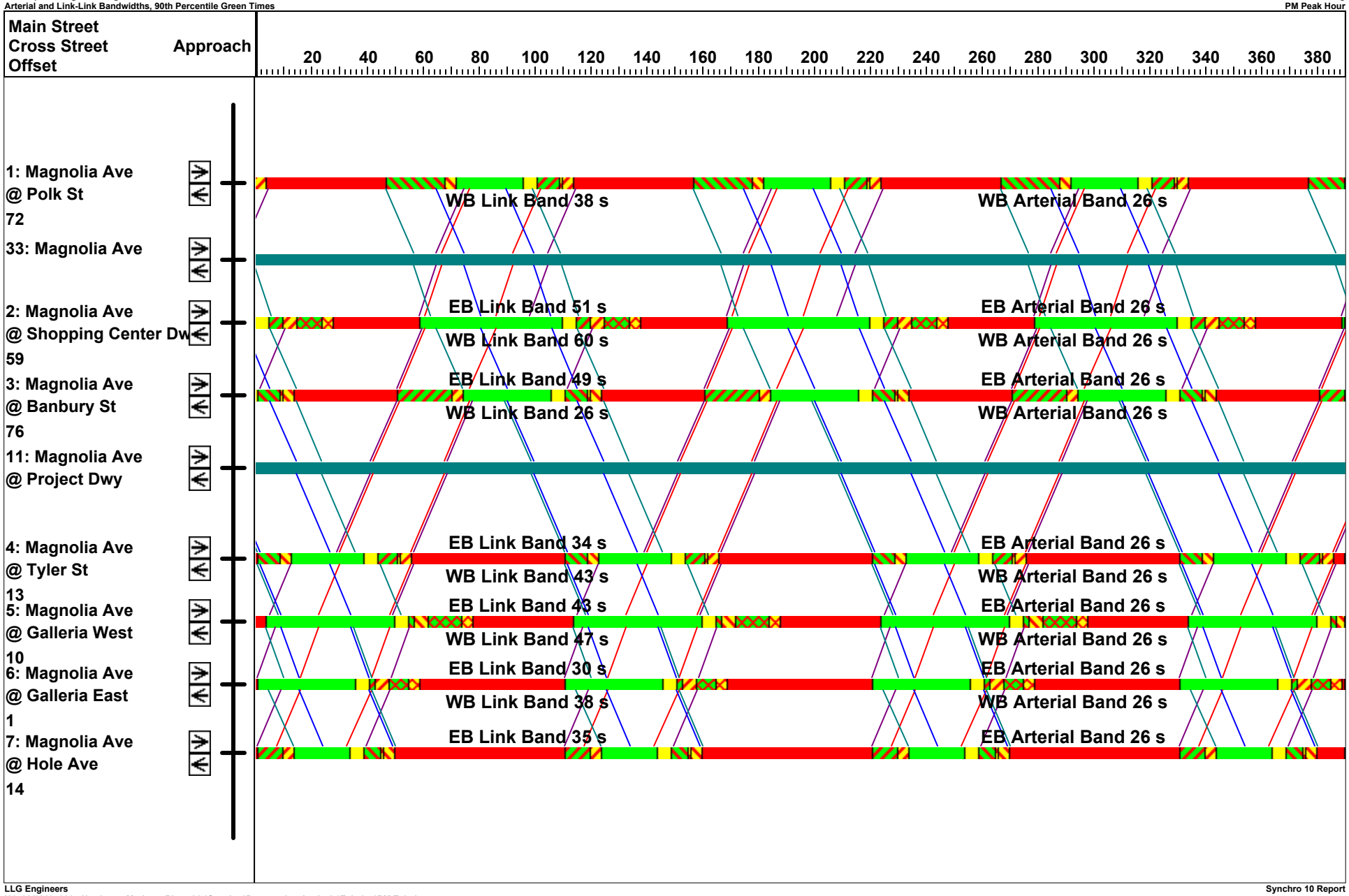
WB Arterial Band 27 s
EB Link Band 42 s
EB Arterial Band 21 s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Cross Street
Approach
Offset
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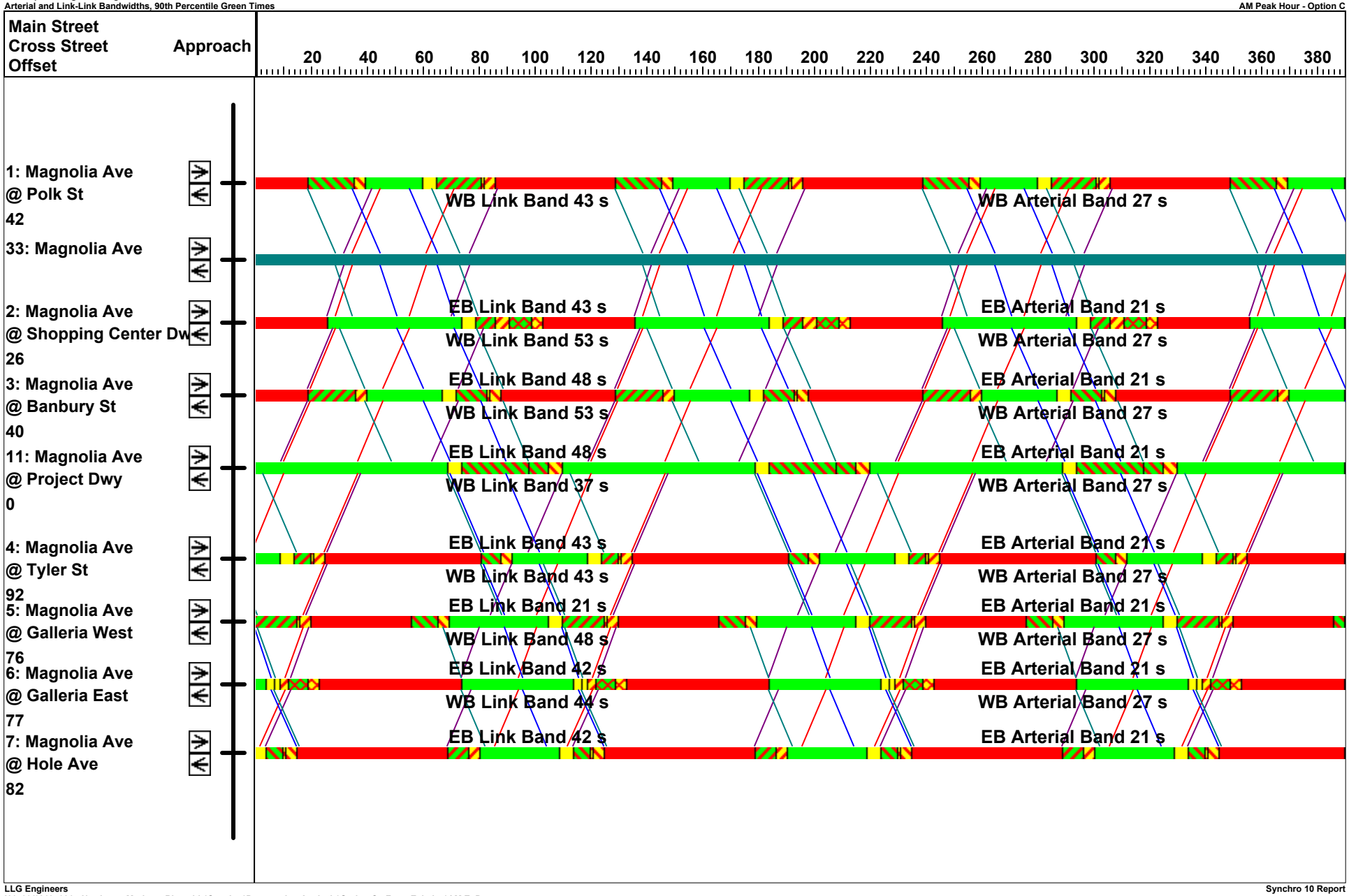
@ Polk St
72
WB Link Band 38 s
WB Arterial Band 26 s
33: Magnolia Ave
2: Magnolia Ave
@ Shopping Center Dw
59
EB Link Band 51 s
WB Link Band 60 s
EB Arterial Band 26 s
WB Arterial Band 26 s
3: Magnolia Ave
@ Banbury St
76
EB Link Band 49 s
WB Link Band 26 s
EB Arterial Band 26 s
WB Arterial Band 26 s
11: Magnolia Ave
@ Project Dwy
4: Magnolia Ave
@ Tyler St
13
EB Link Band 34 s
WB Link Band 43 s
EB Arterial Band 26 s
WB Arterial Band 26 s
5: Magnolia Ave
@ Galleria West
10
EB Link Band 43 s
WB Link Band 47 s
EB Arterial Band 26 s
WB Arterial Band 26 s
6: Magnolia Ave
@ Galleria East
1
EB Link Band 30 s
WB Link Band 38 s
EB Arterial Band 26 s
WB Arterial Band 26 s
7: Magnolia Ave
@ Hole Ave
14
EB Link Band 35 s
EB Arterial Band 26 s

APPENDIX A-II

ALTERNATIVE 1 – HALF SIGNAL
EXISTING PLUS PROJECT TRAFFIC CONDITIONS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Cross Street
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WB Link Band 43 s
WB Arterial Band 27 s
33: Magnolia Ave
2: Magnolia Ave
@ Shopping Center Dw
26
EB Link Band 43 s
WB Link Band 53 s
EB Arterial Band 21 s
WB Arterial Band 27 s
3: Magnolia Ave
@ Banbury St
40
EB Link Band 48 s
WB Link Band 53 s
EB Arterial Band 21 s
WB Arterial Band 27 s
11: Magnolia Ave
@ Project Dwy
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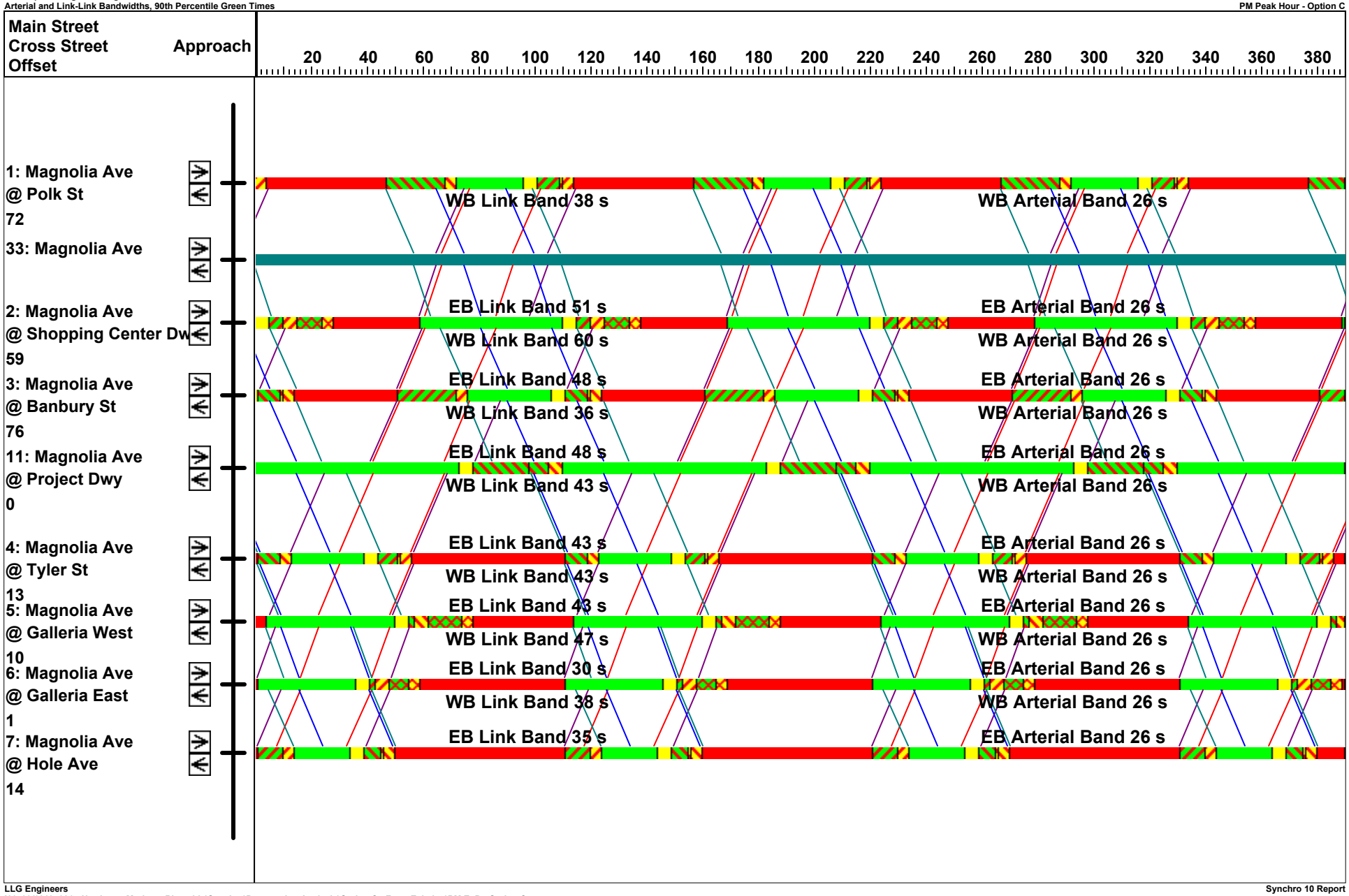
WB Link Band 37 s
EB Arterial Band 21 s
WB Arterial Band 27 s
4: Magnolia Ave
@ Tyler St
92
EB Link Band 43 s
WB Link Band 43 s
EB Arterial Band 21 s
WB Arterial Band 27 s
5: Magnolia Ave
@ Galleria West
76
EB Link Band 21 s
WB Link Band 48 s
EB Arterial Band 21 s
WB Arterial Band 27 s
6: Magnolia Ave
@ Galleria East
77
EB Link Band 42 s
WB Link Band 44 s
EB Arterial Band 21 s
WB Arterial Band 27 s
7: Magnolia Ave
@ Hole Ave
82
EB Link Band 42 s
EB Arterial Band 21 s


Main Street
Cross Street
Approach
Offset
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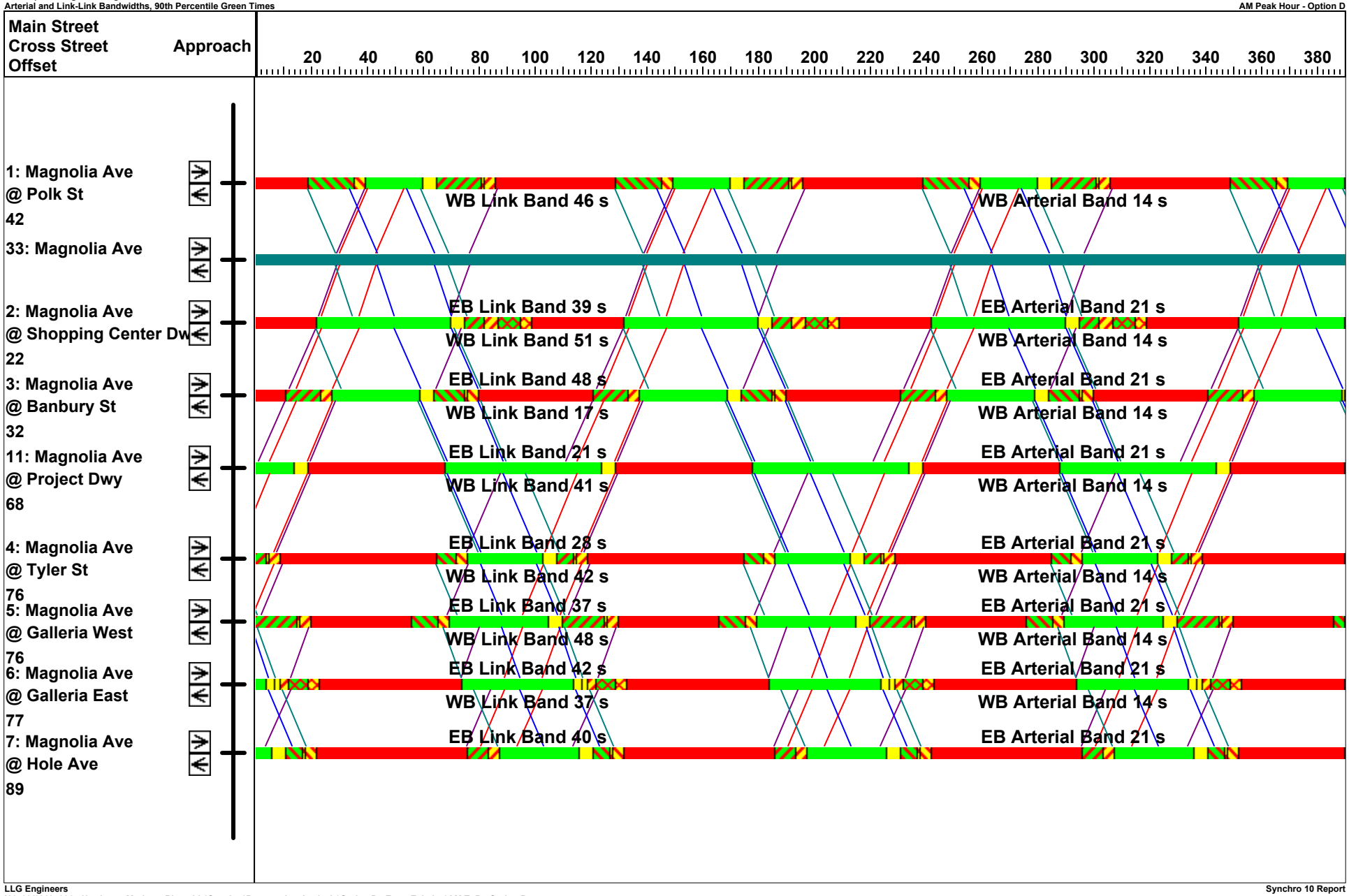
1: Magnolia Ave
@ Polk St
72
33: Magnolia Ave
2: Magnolia Ave
@ Shopping Center Dw
59
3: Magnolia Ave
@ Banbury St
76
11: Magnolia Ave
@ Project Dwy
0
4: Magnolia Ave
@ Tyler St
13
5: Magnolia Ave
@ Galleria West
10
6: Magnolia Ave
@ Galleria East
1
7: Magnolia Ave
@ Hole Ave
14
WB Link Band 38 s
WB Arterial Band 26 s
EB Link Band 51 s
EB Arterial Band 26 s
WB Link Band 60 s
WB Arterial Band 26 s
EB Link Band 48 s
EB Arterial Band 26 s
WB Link Band 36 s
WB Arterial Band 26 s
EB Link Band 48 s
EB Arterial Band 26 s
WB Link Band 43 s
WB Arterial Band 26 s
EB Link Band 43 s
EB Arterial Band 26 s
WB Link Band 43 s
WB Arterial Band 26 s
EB Link Band 43 s
EB Arterial Band 26 s
WB Link Band 47 s
WB Arterial Band 26 s
EB Link Band 30 s
EB Arterial Band 26 s
WB Link Band 38 s
WB Arterial Band 26 s
EB Link Band 35 s
EB Arterial Band 26 s

APPENDIX A-III

ALTERNATIVE 2 – FULL ACCESS SIGNAL EXISTING PLUS PROJECT TRAFFIC CONDITIONS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Cross Street
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33: Magnolia Ave
2: Magnolia Ave
@ Shopping Center Dw
22
3: Magnolia Ave
@ Banbury St
32
11: Magnolia Ave
@ Project Dwy
68
4: Magnolia Ave
@ Tyler St
76
5: Magnolia Ave
@ Galleria West
76
6: Magnolia Ave
@ Galleria East
77
7: Magnolia Ave
@ Hole Ave
89
WB Link Band 46 s
WB Arterial Band 14 s
EB Link Band 39 s
EB Arterial Band 21 s
WB Link Band 51 s
WB Arterial Band 14 s
EB Link Band 48 s
EB Arterial Band 21 s
WB Link Band 17 s
WB Arterial Band 14 s
EB Link Band 21 s
EB Arterial Band 21 s
WB Link Band 41 s
WB Arterial Band 14 s
EB Link Band 28 s
EB Arterial Band 21 s
WB Link Band 42 s
WB Arterial Band 14 s
EB Link Band 37 s
EB Arterial Band 21 s
WB Link Band 48 s
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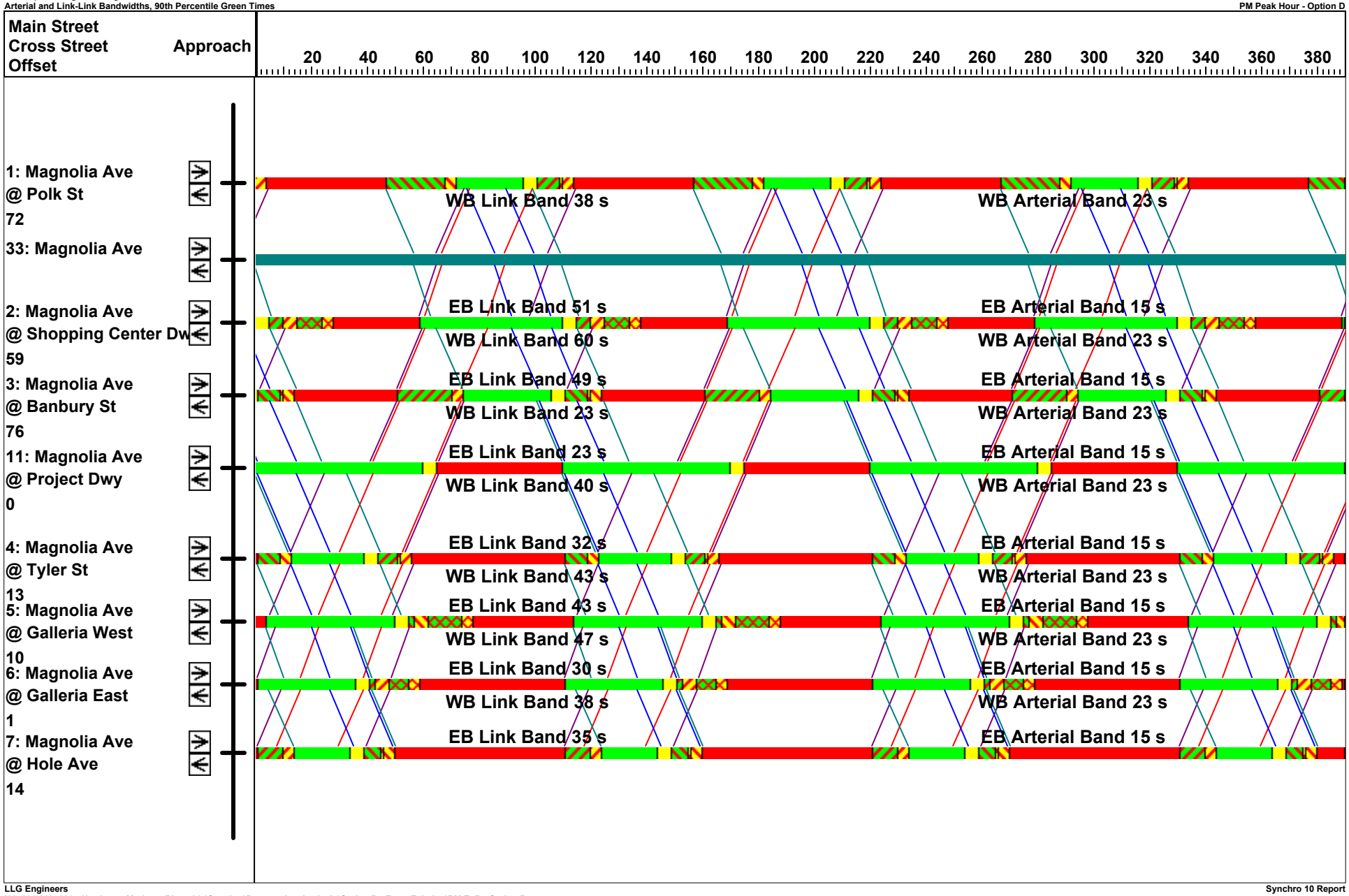
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340
360
380
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@ Polk St
72
33: Magnolia Ave
2: Magnolia Ave
@ Shopping Center Dw
59
3: Magnolia Ave
@ Banbury St
76
11: Magnolia Ave
@ Project Dwy
0
4: Magnolia Ave
@ Tyler St
13
5: Magnolia Ave
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EB Arterial Band 15 s
WB Link Band 47 s
WB Arterial Band 23 s
EB Link Band 30 s
EB Arterial Band 15 s
WB Link Band 38 s
WB Arterial Band 23 s
EB Link Band 35 s
EB Arterial Band 15 s

APPENDIX B

INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

APPENDIX B-I

EXISTING TRAFFIC CONDITIONS

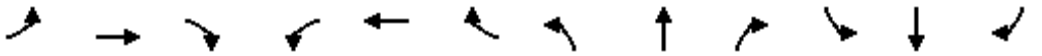
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	461	137	82	428	42	36	44	40	68	106	197
Future Volume (veh/h)	100	461	137	82	428	42	36	44	40	68	106	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	106	490	146	87	455	45	38	47	43	72	113	210
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	1007	298	343	1632	161	78	164	150	143	388	346
Arrive On Green	0.08	0.37	0.37	0.19	0.50	0.50	0.04	0.18	0.18	0.08	0.22	0.22
Sat Flow, veh/h	1781	2703	800	1781	3267	322	1781	899	823	1781	1777	1585
Grp Volume(v), veh/h	106	321	315	87	247	253	38	0	90	72	113	210
Grp Sat Flow(s),veh/h/ln	1781	1777	1726	1781	1777	1812	1781	0	1722	1781	1777	1585
Q Serve(g_s), s	6.4	15.2	15.4	4.6	8.9	9.0	2.3	0.0	5.0	4.3	5.8	13.1
Cycle Q Clear(g_c), s	6.4	15.2	15.4	4.6	8.9	9.0	2.3	0.0	5.0	4.3	5.8	13.1
Prop In Lane	1.00		0.46	1.00		0.18	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	134	662	643	343	887	905	78	0	313	143	388	346
V/C Ratio(X)	0.79	0.48	0.49	0.25	0.28	0.28	0.49	0.00	0.29	0.50	0.29	0.61
Avail Cap(c_a), veh/h	308	662	643	343	887	905	162	0	313	227	388	346
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	26.4	26.5	37.7	16.0	16.0	51.4	0.0	38.8	48.5	35.9	38.8
Incr Delay (d2), s/veh	10.0	2.5	2.7	0.4	0.8	0.8	4.7	0.0	2.3	2.7	1.9	7.7
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	3.2	6.7	6.6	2.0	3.6	3.7	1.1	0.0	2.3	2.0	2.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	28.9	29.1	38.1	16.8	16.8	56.1	0.0	41.2	51.3	37.8	46.5
LnGrp LOS	E	C	C	D	B	B	E	A	D	D	D	D
Approach Vol, veh/h		742			587			128			395	
Approach Delay, s/veh		33.5			19.9			45.6			44.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	25.0	26.2	46.0	8.8	29.0	12.3	59.9
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	14.0	20.0	17.0	* 41	10.0	24.0	19.0	39.0
Max Q Clear Time (g_c+I1), s	6.3	7.0	6.6	17.4	4.3	15.1	8.4	11.0
Green Ext Time (p_c), s	0.1	0.3	0.1	3.8	0.0	1.2	0.2	2.9

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

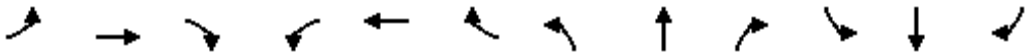
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	568	23	71	535	4	7	0	12	0	0	1
Future Volume (veh/h)	15	568	23	71	535	4	7	0	12	0	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	624	25	78	588	4	8	0	13	0	0	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	2198	88	437	1974	13	336	357	303	65	357	303
Arrive On Green	0.14	0.44	0.44	0.49	1.00	1.00	0.19	0.00	0.19	0.00	0.00	0.19
Sat Flow, veh/h	1781	5037	201	1781	3618	25	1416	1870	1585	1401	1870	1585
Grp Volume(v), veh/h	16	421	228	78	289	303	8	0	13	0	0	1
Grp Sat Flow(s),veh/h/ln	1781	1702	1834	1781	1777	1866	1416	1870	1585	1401	1870	1585
Q Serve(g_s), s	0.9	8.7	8.8	2.7	0.0	0.0	0.5	0.0	0.7	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.9	8.7	8.8	2.7	0.0	0.0	0.5	0.0	0.7	0.0	0.0	0.1
Prop In Lane	1.00		0.11	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1485	800	437	969	1018	336	357	303	65	357	303
V/C Ratio(X)	0.07	0.28	0.29	0.18	0.30	0.30	0.02	0.00	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	243	1485	800	437	969	1018	336	357	303	65	357	303
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	19.9	20.0	21.8	0.0	0.0	36.2	0.0	36.3	0.0	0.0	36.0
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.2	0.7	0.7	0.1	0.0	0.3	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	0.4	3.4	3.8	1.1	0.2	0.2	0.2	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	20.4	20.8	22.0	0.7	0.7	36.3	0.0	36.6	0.0	0.0	36.0
LnGrp LOS	D	C	C	C	A	A	D	A	D	A	A	D
Approach Vol, veh/h		665			670			21			1	
Approach Delay, s/veh		21.1			3.2			36.5			36.0	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	31.0	53.0		26.0	19.0	65.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		21.0	27.0	48.0		21.0	15.0	60.0				
Max Q Clear Time (g_c+I1), s		2.7	4.7	10.8		2.1	2.9	2.0				
Green Ext Time (p_c), s		0.0	0.2	4.3		0.0	0.0	3.7				

Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	541	37	53	543	0	39	1	81	0	0	2
Future Volume (veh/h)	27	541	37	53	543	0	39	1	81	0	0	2
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	615	42	60	617	0	44	1	92	0	0	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	2403	163	95	1551	692	527	6	514	65	0	519
Arrive On Green	0.20	0.98	0.98	0.02	0.14	0.00	0.33	0.33	0.33	0.00	0.00	0.33
Sat Flow, veh/h	1781	4884	331	1781	3554	1585	1415	17	1571	1303	0	1585
Grp Volume(v), veh/h	31	427	230	60	617	0	44	0	93	0	0	2
Grp Sat Flow(s),veh/h/ln	1781	1702	1811	1781	1777	1585	1415	0	1588	1303	0	1585
Q Serve(g_s), s	1.6	0.3	0.3	3.7	17.3	0.0	2.4	0.0	4.6	0.0	0.0	0.1
Cycle Q Clear(g_c), s	1.6	0.3	0.3	3.7	17.3	0.0	2.5	0.0	4.6	0.0	0.0	0.1
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	178	1675	891	95	1551	692	527	0	520	65	0	519
V/C Ratio(X)	0.17	0.26	0.26	0.63	0.40	0.00	0.08	0.00	0.18	0.00	0.00	0.00
Avail Cap(c_a), veh/h	194	1675	891	275	1551	692	527	0	520	65	0	519
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	0.4	0.4	52.9	34.0	0.0	25.8	0.0	26.4	0.0	0.0	24.9
Incr Delay (d2), s/veh	0.4	0.4	0.7	6.7	0.8	0.0	0.3	0.0	0.8	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	0.7	0.2	0.3	1.8	8.4	0.0	0.9	0.0	1.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	0.8	1.1	59.6	34.7	0.0	26.1	0.0	27.2	0.0	0.0	24.9
LnGrp LOS	D	A	A	E	C	A	C	A	C	A	A	C
Approach Vol, veh/h		688			677			137			2	
Approach Delay, s/veh		2.7			36.9			26.8			24.9	
Approach LOS		A			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		41.0	9.9	59.1		41.0	16.0	53.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	5.0	* 5				
Max Green Setting (Gmax), s		36.0	17.0	43.0		36.0	12.0	* 48				
Max Q Clear Time (g_c+I1), s		6.6	5.7	2.3		2.1	3.6	19.3				
Green Ext Time (p_c), s		0.7	0.1	4.4		0.0	0.0	4.2				

Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Notes

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

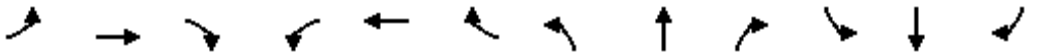
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	429	103	116	303	37	195	622	208	30	498	103
Future Volume (veh/h)	118	429	103	116	303	37	195	622	208	30	498	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	452	108	122	319	39	205	655	219	32	524	108
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	215	1764	670	837	2471	295	267	975	686	137	829	356
Arrive On Green	0.02	0.11	0.11	0.08	0.18	0.18	0.03	0.06	0.06	0.04	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	4622	553	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	124	452	108	122	233	125	205	655	219	32	524	108
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1771	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	3.9	8.9	2.2	3.6	6.3	6.5	6.5	13.8	0.0	1.0	10.5	6.2
Cycle Q Clear(g_c), s	3.9	8.9	2.2	3.6	6.3	6.5	6.5	13.8	0.0	1.0	10.5	6.2
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	215	1764	670	837	1819	947	267	975	686	137	829	356
V/C Ratio(X)	0.58	0.26	0.16	0.15	0.13	0.13	0.77	0.67	0.32	0.23	0.63	0.30
Avail Cap(c_a), veh/h	220	1764	670	837	1819	947	283	1857	960	220	1764	646
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.97	0.97	0.97
Uniform Delay (d), s/veh	52.4	35.8	10.3	40.0	23.7	23.8	52.6	48.2	24.4	51.2	43.0	35.5
Incr Delay (d2), s/veh	3.5	0.4	0.5	0.1	0.1	0.3	11.3	0.8	0.3	0.8	0.8	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	1.8	3.9	1.0	1.5	2.6	2.8	3.3	6.4	4.3	0.4	4.4	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.0	36.2	10.8	40.1	23.8	24.1	63.9	49.0	24.6	52.0	43.8	36.0
LnGrp LOS	E	D	B	D	C	C	E	D	C	D	D	D
Approach Vol, veh/h		684			480			1079			664	
Approach Delay, s/veh		35.8			28.0			46.9			42.9	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	26.0	31.6	43.0	12.5	22.9	10.8	63.8
Change Period (Y+Rc), s	5.0	* 5	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	* 40	7.0	* 38	9.0	38.0	7.0	38.0
Max Q Clear Time (g_c+I1), s	3.0	15.8	5.6	10.9	8.5	12.5	5.9	8.5
Green Ext Time (p_c), s	0.0	5.2	0.0	3.3	0.0	3.8	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	40.2
HCM 6th LOS	D

Notes

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



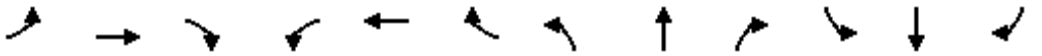
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	593	37	21	490	13	1	1	9	7	0	5
Future Volume (veh/h)	25	593	37	21	490	13	1	1	9	7	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	611	38	22	505	13	1	1	9	7	0	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	2275	706	688	4125	106	113	60	51	75	5	20
Arrive On Green	0.07	0.89	0.89	0.77	1.00	1.00	0.03	0.03	0.03	0.03	0.00	0.03
Sat Flow, veh/h	1781	5106	1585	1781	5119	131	1411	1870	1585	726	158	632
Grp Volume(v), veh/h	26	611	38	22	335	183	1	1	9	12	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1847	1411	1870	1585	1516	0	0
Q Serve(g_s), s	1.5	1.9	0.3	0.3	0.0	0.0	0.0	0.1	0.6	0.2	0.0	0.0
Cycle Q Clear(g_c), s	1.5	1.9	0.3	0.3	0.0	0.0	0.1	0.1	0.6	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.58		0.42
Lane Grp Cap(c), veh/h	62	2275	706	688	2743	1488	113	60	51	101	0	0
V/C Ratio(X)	0.42	0.27	0.05	0.03	0.12	0.12	0.01	0.02	0.18	0.12	0.00	0.00
Avail Cap(c_a), veh/h	259	2275	706	688	2743	1488	466	527	447	469	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.1	3.4	3.3	7.7	0.0	0.0	51.6	51.6	51.8	51.9	0.0	0.0
Incr Delay (d2), s/veh	4.3	0.3	0.1	0.0	0.1	0.2	0.0	0.1	1.6	0.5	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	0.7	0.6	0.1	0.1	0.0	0.1	0.0	0.0	0.3	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	3.7	3.5	7.7	0.1	0.2	51.6	51.7	53.5	52.4	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	D	D	D	A	A
Approach Vol, veh/h		675			540			11			12	
Approach Delay, s/veh		5.7			0.4			53.1			52.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.5	47.5	54.0	8.5	7.8	93.6
Change Period (Y+Rc), s	5.0	5.0	* 5	5.0	4.0	5.0
Max Green Setting (Gmax), s	31.0	16.0	* 49	31.0	16.0	49.0
Max Q Clear Time (g_c+I1), s	2.6	2.3	3.9	2.8	3.5	2.0
Green Ext Time (p_c), s	0.0	0.0	4.6	0.0	0.0	3.3

Intersection Summary	
HCM 6th Ctrl Delay	4.3
HCM 6th LOS	A

Notes

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



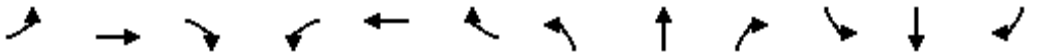
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	604	3	17	518	16	0	0	8	3	0	4
Future Volume (veh/h)	6	604	3	17	518	16	0	0	8	3	0	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
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	1870	1870	1870	1870	1870	1870	0	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	6	616	0	17	529	16	0	0	8	3	0	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	2	2	2	2
Cap, veh/h	405	1718		453	1852	56	0	0	0	0	0	0
Arrive On Green	0.45	0.67	0.00	0.51	0.73	0.73	0.00	0.00	0.00	0.28	0.00	0.28
Sat Flow, veh/h	1781	5106	1585	1781	5093	153		0		0	0	0
Grp Volume(v), veh/h	6	616	0	17	353	192		0.0		7	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1843				0	0	0
Q Serve(g_s), s	0.2	5.7	0.0	0.5	3.9	4.0				0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	5.7	0.0	0.5	3.9	4.0				0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08				0.43		0.57
Lane Grp Cap(c), veh/h	405	1718		453	1238	670				0	0	0
V/C Ratio(X)	0.01	0.36		0.04	0.29	0.29				0.00	0.00	0.00
Avail Cap(c_a), veh/h	405	1718		453	1238	670				0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	0.99	0.99	0.99				1.00	0.00	0.00
Uniform Delay (d), s/veh	23.2	12.9	0.0	20.3	10.1	10.1				28.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.6	1.1				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
%ile BackOfQ(50%),veh/ln	0.1	1.9	0.0	0.2	1.4	1.6				0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	13.5	0.0	20.3	10.7	11.2				28.4	0.0	0.0
LnGrp LOS	C	B		C	B	B				C	A	A
Approach Vol, veh/h		622	A		562						7	
Approach Delay, s/veh		13.6			11.1						28.4	
Approach LOS		B			B						C	

Timer - Assigned Phs		3	4		6	7	8					
Phs Duration (G+Y+Rc), s		32.0	42.0		36.0	29.0	45.0					
Change Period (Y+Rc), s		4.0	5.0		5.0	4.0	5.0					
Max Green Setting (Gmax), s		13.0	37.0		31.0	10.0	40.0					
Max Q Clear Time (g_c+I1), s		2.5	7.7		2.0	2.2	6.0					
Green Ext Time (p_c), s		0.0	4.3		0.0	0.0	3.5					

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	623	9	24	466	281	7	13	13	233	11	11
Future Volume (veh/h)	29	623	9	24	466	281	7	13	13	233	11	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	663	10	26	496	299	7	14	14	248	12	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1012	3175	48	121	1764	548	146	70	70	338	84	84
Arrive On Green	0.59	1.00	1.00	0.03	0.35	0.35	0.08	0.08	0.08	0.03	0.03	0.03
Sat Flow, veh/h	3456	5182	78	3456	5106	1585	1781	858	858	3456	858	858
Grp Volume(v), veh/h	31	435	238	26	496	299	7	0	28	248	0	24
Grp Sat Flow(s),veh/h/ln	1728	1702	1856	1728	1702	1585	1781	0	1716	1728	0	1716
Q Serve(g_s), s	0.4	0.0	0.0	0.8	7.7	16.7	0.4	0.0	1.7	7.8	0.0	1.5
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.8	7.7	16.7	0.4	0.0	1.7	7.8	0.0	1.5
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.50	1.00		0.50
Lane Grp Cap(c), veh/h	1012	2085	1137	121	1764	548	146	0	140	338	0	168
V/C Ratio(X)	0.03	0.21	0.21	0.22	0.28	0.55	0.05	0.00	0.20	0.73	0.00	0.14
Avail Cap(c_a), veh/h	1012	2085	1137	220	1764	548	146	0	140	1162	0	577
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94
Uniform Delay (d), s/veh	16.2	0.0	0.0	51.6	26.1	29.0	46.6	0.0	47.1	51.8	0.0	48.7
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.9	0.4	3.9	0.6	0.0	3.2	2.9	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.1	0.4	3.1	6.6	0.2	0.0	0.8	3.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	0.2	0.4	52.5	26.5	32.9	47.2	0.0	50.3	54.7	0.0	49.1
LnGrp LOS	B	A	A	D	C	C	D	A	D	D	A	D
Approach Vol, veh/h		704			821			35			272	
Approach Delay, s/veh		1.0			29.7			49.7			54.2	
Approach LOS		A			C			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.0	7.8	72.4		15.8	37.2	43.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	5.0	* 5				
Max Green Setting (Gmax), s		9.0	7.0	38.0		37.0	7.0	* 38				
Max Q Clear Time (g_c+I1), s		3.7	2.8	2.0		9.8	2.4	18.7				
Green Ext Time (p_c), s		0.0	0.0	4.4		1.0	0.0	3.9				

Intersection Summary												
HCM 6th Ctrl Delay			22.7									
HCM 6th LOS			C									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	247	190	25	142	74	182	422	174	67	427	31
Future Volume (veh/h)	33	247	190	25	142	74	182	422	174	67	427	31
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	257	198	26	148	77	190	440	0	70	445	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	383	171	62	360	250	1267	2266		100	1625	
Arrive On Green	0.04	0.11	0.11	0.01	0.03	0.03	0.37	0.64	0.00	0.06	0.32	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	1781	5274	0
Grp Volume(v), veh/h	34	257	198	26	148	77	190	440	0	70	445	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1781	1702	0
Q Serve(g_s), s	2.1	7.7	5.8	1.6	4.5	4.9	4.1	5.6	0.0	4.2	7.2	0.0
Cycle Q Clear(g_c), s	2.1	7.7	5.8	1.6	4.5	4.9	4.1	5.6	0.0	4.2	7.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	73	383	171	62	360	250	1267	2266		100	1625	
V/C Ratio(X)	0.46	0.67	1.16	0.42	0.41	0.31	0.15	0.19		0.70	0.27	
Avail Cap(c_a), veh/h	146	1131	504	146	1131	593	1267	2266		194	1625	
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	0.97	0.97	0.97	0.84	0.84	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.6	47.2	11.7	53.3	49.9	44.2	23.4	8.2	0.0	51.0	28.0	0.0
Incr Delay (d2), s/veh	4.5	2.1	86.0	4.3	0.7	0.7	0.0	0.2	0.0	8.5	0.4	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	1.0	3.4	8.4	0.8	2.0	2.0	1.6	2.0	0.0	2.1	2.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.1	49.3	97.6	57.6	50.7	44.9	23.4	8.4	0.0	59.5	28.4	0.0
LnGrp LOS	E	D	F	E	D	D	C	A		E	C	
Approach Vol, veh/h		489			251			630	A		515	A
Approach Delay, s/veh		69.3			49.6			12.9			32.7	
Approach LOS		E			D			B			C	

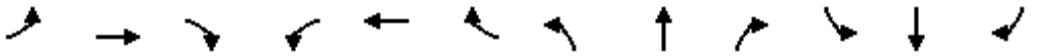
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	75.1	7.8	16.8	45.3	40.0	8.5	16.2
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	12.0	36.0	9.0	35.0	13.0	* 35	9.0	35.0
Max Q Clear Time (g_c+I1), s	6.2	7.6	3.6	9.7	6.1	9.2	4.1	6.9
Green Ext Time (p_c), s	0.1	2.8	0.0	2.2	0.3	2.9	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	37.8
HCM 6th LOS	D

Notes

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

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



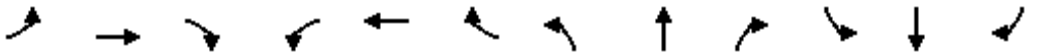
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	5	24	3	8	46	1011	48	10	718	3
Future Volume (veh/h)	5	2	5	24	3	8	46	1011	48	10	718	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	2	5	25	3	8	47	1042	49	10	740	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	27	33	137	92	78	771	5121	240	58	2004	8
Arrive On Green	0.05	0.05	0.05	0.05	0.05	0.05	0.43	0.81	0.81	0.01	0.26	0.26
Sat Flow, veh/h	387	558	675	1409	1870	1585	1781	6345	297	3456	5249	21
Grp Volume(v), veh/h	12	0	0	25	3	8	47	791	300	10	480	263
Grp Sat Flow(s),veh/h/ln	1620	0	0	1409	1870	1585	1781	1609	1817	1728	1702	1867
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.2	0.5	1.7	4.2	4.2	0.3	12.7	12.7
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.7	0.2	0.5	1.7	4.2	4.2	0.3	12.7	12.7
Prop In Lane	0.42		0.42	1.00		1.00	1.00		0.16	1.00		0.01
Lane Grp Cap(c), veh/h	126	0	0	137	92	78	771	3894	1466	58	1300	713
V/C Ratio(X)	0.10	0.00	0.00	0.18	0.03	0.10	0.06	0.20	0.20	0.17	0.37	0.37
Avail Cap(c_a), veh/h	597	0	0	567	663	562	771	3894	1466	346	1300	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.87	0.87
Uniform Delay (d), s/veh	50.1	0.0	0.0	50.5	49.8	50.0	18.2	2.5	2.5	53.6	30.0	30.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.6	0.1	0.6	0.0	0.1	0.3	1.2	0.7	1.3
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	0.3	0.0	0.0	0.7	0.1	0.2	0.7	0.8	1.0	0.1	5.5	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	0.0	51.1	50.0	50.6	18.2	2.6	2.8	54.8	30.7	31.3
LnGrp LOS	D	A	A	D	D	D	B	A	A	D	C	C
Approach Vol, veh/h		12			36			1138			753	
Approach Delay, s/veh		50.4			50.9			3.3			31.3	
Approach LOS		D			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	93.8		10.4	52.6	47.0		10.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	5.0	* 5		5.0				
Max Green Setting (Gmax), s	11.0	46.0		39.0	15.0	* 42		39.0				
Max Q Clear Time (g_c+I1), s	2.3	6.2		2.7	3.7	14.7		3.7				
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	4.8		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		15.3	
HCM 6th LOS		B	

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	3	20	35	4	6	426	1106	20	15	669	38
Future Volume (veh/h)	33	3	20	35	4	6	426	1106	20	15	669	38
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	3	21	36	4	0	439	1140	21	15	690	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	101	86	147	102		1740	2383	44	670	1521	
Arrive On Green	0.04	0.05	0.05	0.04	0.05	0.00	0.50	0.36	0.36	0.38	0.24	0.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	6554	121	1781	6696	0
Grp Volume(v), veh/h	34	3	21	36	4	0	439	839	322	15	690	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1609	1849	1781	1609	0
Q Serve(g_s), s	2.1	0.2	1.4	1.1	0.2	0.0	7.9	14.7	14.8	0.6	10.1	0.0
Cycle Q Clear(g_c), s	2.1	0.2	1.4	1.1	0.2	0.0	7.9	14.7	14.8	0.6	10.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.00
Lane Grp Cap(c), veh/h	75	101	86	147	102		1740	1755	672	670	1521	
V/C Ratio(X)	0.46	0.03	0.25	0.25	0.04		0.25	0.48	0.48	0.02	0.45	
Avail Cap(c_a), veh/h	113	646	548	220	646		1740	1755	672	670	1521	
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	49.3	49.9	51.0	49.3	0.0	15.5	27.0	27.0	21.6	35.9	0.0
Incr Delay (d2), s/veh	4.3	0.1	1.5	0.9	0.2	0.0	0.1	0.9	2.4	0.0	1.0	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	1.0	0.1	0.6	0.5	0.1	0.0	3.0	5.6	6.7	0.2	4.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	49.4	51.3	51.8	49.4	0.0	15.6	27.9	29.4	21.6	36.9	0.0
LnGrp LOS	E	D	D	D	D		B	C	C	C	D	
Approach Vol, veh/h		58			40	A		1600			705	A
Approach Delay, s/veh		53.8			51.6			24.8			36.6	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.4	45.0	8.7	10.9	59.4	31.0	8.6	11.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	40.0	7.0	38.0	21.0	26.0	7.0	38.0
Max Q Clear Time (g_c+I1), s	2.6	16.8	3.1	3.4	9.9	12.1	4.1	2.2
Green Ext Time (p_c), s	0.0	7.9	0.0	0.1	1.2	3.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	622	588	13	0	8
Future Vol, veh/h	0	622	588	13	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	707	668	15	0	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	342
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	558
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	558
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

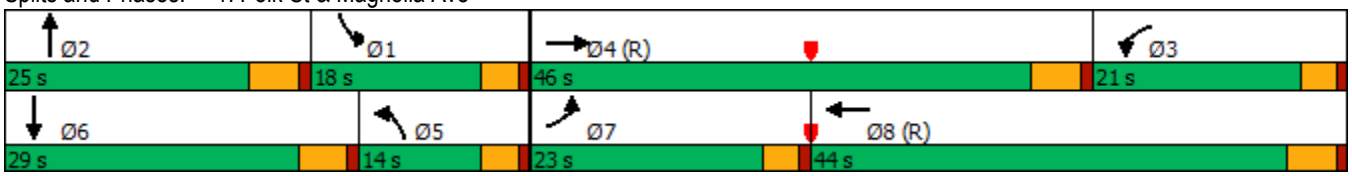
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	558
HCM Lane V/C Ratio	-	-	-	0.016
HCM Control Delay (s)	-	-	-	11.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	461	137	82	428	42	36	44	40	68	106	197
Future Volume (vph)	100	461	137	82	428	42	36	44	40	68	106	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	225		0	80		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.966			0.986			0.928			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3419	0	1770	3490	0	1770	1729	0	1770	3192	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3419	0	1770	3490	0	1770	1729	0	1770	3192	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40			10			37			210	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		647			586			521			537	
Travel Time (s)		11.0			10.0			8.9			9.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	106	490	146	87	455	45	38	47	43	72	113	210
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	636	0	87	500	0	38	90	0	72	323	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												

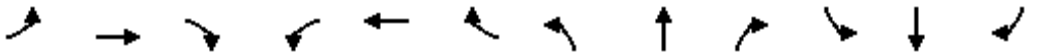
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		11.0	12.0		11.0	23.0	
Total Split (s)	23.0	46.0		21.0	44.0		14.0	25.0		18.0	29.0	
Total Split (%)	20.9%	41.8%		19.1%	40.0%		12.7%	22.7%		16.4%	26.4%	
Maximum Green (s)	19.0	41.0		17.0	39.0		10.0	20.0		14.0	24.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
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	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Walk Time (s)		7.0			7.0						7.0	
Flash Dont Walk (s)		14.0			14.0						11.0	
Pedestrian Calls (#/hr)		5			5						5	
Act Effct Green (s)	11.9	49.8		15.0	50.7		8.1	20.8		10.8	25.7	
Actuated g/C Ratio	0.11	0.45		0.14	0.46		0.07	0.19		0.10	0.23	
v/c Ratio	0.55	0.41		0.36	0.31		0.29	0.25		0.42	0.36	
Control Delay	56.9	22.1		23.0	4.4		53.7	26.1		53.1	13.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.9	22.1		23.0	4.4		53.7	26.1		53.1	13.8	
LOS	E	C		C	A		D	C		D	B	
Approach Delay		27.1			7.2			34.3			21.0	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	72	161		45	14		26	32		48	34	
Queue Length 95th (ft)	124	222		85	21		59	78		93	73	
Internal Link Dist (ft)		567			506			441			457	
Turn Bay Length (ft)	195			225			80			100		
Base Capacity (vph)	305	1570		273	1614		160	356		225	905	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.41		0.32	0.31		0.24	0.25		0.32	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 42 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 20.0		Intersection LOS: B	
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Polk St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	568	23	71	535	4	7	0	12	0	0	1
Future Volume (vph)	15	568	23	71	535	4	7	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	215		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5055	0	1770	3536	0	1770	1863	1583	1863	1863	1583
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5055	0	1770	3536	0	1410	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1				457			445
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		357			547			306			241	
Travel Time (s)		6.1			9.3			8.3			6.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	16	624	25	78	588	4	8	0	13	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	649	0	78	592	0	8	0	13	0	0	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6

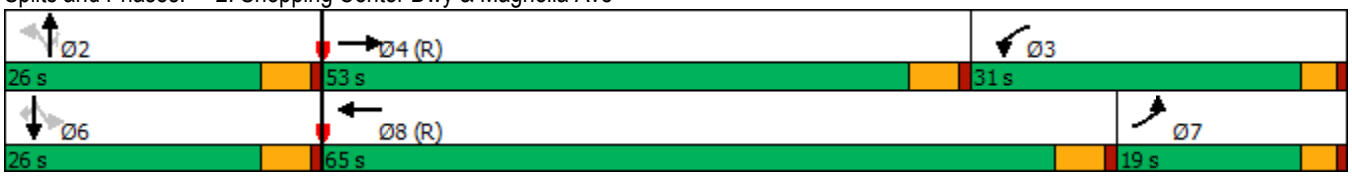


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	12.0	23.0		12.0	19.0		12.0	12.0	12.0	23.0	23.0	23.0
Total Split (s)	19.0	53.0		31.0	65.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	17.3%	48.2%		28.2%	59.1%		23.6%	23.6%	23.6%	23.6%	23.6%	23.6%
Maximum Green (s)	15.0	48.0		27.0	60.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0			7.0					7.0	7.0	7.0
Flash Dont Walk (s)		11.0			7.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		5			5					5	5	5
Act Effct Green (s)	7.3	50.4		13.0	60.6		34.8		34.8			34.8
Actuated g/C Ratio	0.07	0.46		0.12	0.55		0.32		0.32			0.32
v/c Ratio	0.14	0.28		0.37	0.30		0.02		0.02			0.00
Control Delay	53.7	6.4		44.0	2.7		30.0		0.0			0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0			0.0
Total Delay	53.7	6.4		44.0	2.7		30.0		0.0			0.0
LOS	D	A		D	A		C		A			A
Approach Delay		7.5			7.5			11.4				
Approach LOS		A			A			B				
Queue Length 50th (ft)	12	43		60	16		4		0			0
Queue Length 95th (ft)	m31	50		109	21		17		0			0
Internal Link Dist (ft)		277			467			226			161	
Turn Bay Length (ft)	225			215								
Base Capacity (vph)	241	2319		434	1947		445		812			804
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	0.07	0.28		0.18	0.30		0.02		0.02			0.00

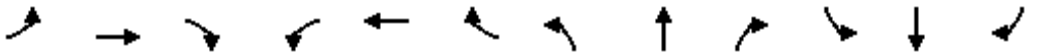
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 26 (24%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 7.6		Intersection LOS: A	
Intersection Capacity Utilization 39.1%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 2: Shopping Center Dwy & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	541	37	53	543	0	39	1	81	0	0	2
Future Volume (vph)	27	541	37	53	543	0	39	1	81	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	155		0	140		0	50		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990						0.852			0.850	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5034	0	1770	3539	1863	1770	1587	0	1863	1583	0
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5034	0	1770	3539	1863	1410	1587	0	1863	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11						92			355	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		547			546			332			305	
Travel Time (s)		9.3			9.3			9.1			8.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	31	615	42	60	617	0	44	1	92	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	657	0	60	617	0	44	93	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		

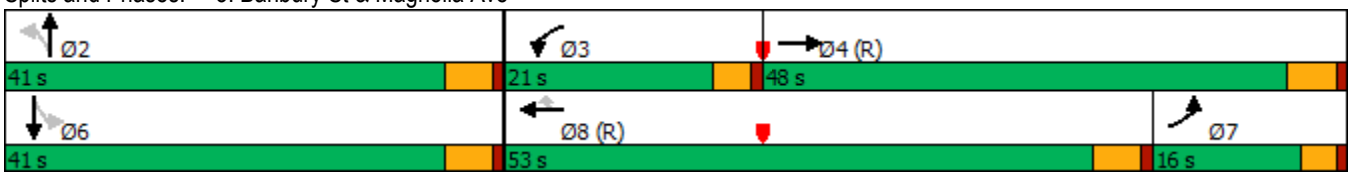


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	36.0	36.0		36.0	36.0	
Total Split (s)	16.0	48.0		21.0	53.0	53.0	41.0	41.0		41.0	41.0	
Total Split (%)	14.5%	43.6%		19.1%	48.2%	48.2%	37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	12.0	43.0		17.0	48.0	48.0	36.0	36.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		11.0			11.0	11.0				24.0	24.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	10.0	52.8		9.4	54.4		36.0	36.0			36.0	
Actuated g/C Ratio	0.09	0.48		0.09	0.49		0.33	0.33			0.33	
v/c Ratio	0.19	0.27		0.40	0.35		0.10	0.16			0.00	
Control Delay	27.5	2.3		58.2	13.5		26.6	6.3			0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	27.5	2.3		58.2	13.5		26.6	6.3			0.0	
LOS	C	A		E	B		C	A			A	
Approach Delay		3.4			17.5			12.8				
Approach LOS		A			B			B				
Queue Length 50th (ft)	21	8		43	122		21	1			0	
Queue Length 95th (ft)	49	10		m75	152		47	35			0	
Internal Link Dist (ft)		467			466			252			225	
Turn Bay Length (ft)	155			140			50					
Base Capacity (vph)	193	2424		273	1750		461	581			756	
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	0.16	0.27		0.22	0.35		0.10	0.16			0.00	

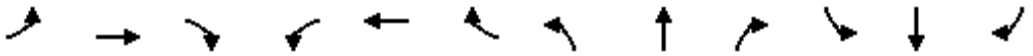
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 40 (36%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 41.3%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 3: Banbury St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	429	103	116	303	37	195	622	208	30	498	103
Future Volume (vph)	118	429	103	116	303	37	195	622	208	30	498	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		100	150		0	245		0	170		160
Storage Lanes	2		1	2		0	2		1	2		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850		0.984				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5004	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5004	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			119		21				219			109
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		704			440			651			1448	
Travel Time (s)		12.0			7.5			11.1			24.7	
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
Adj. Flow (vph)	124	452	108	122	319	39	205	655	219	32	524	108
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	452	108	122	358	0	205	655	219	32	524	108
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6



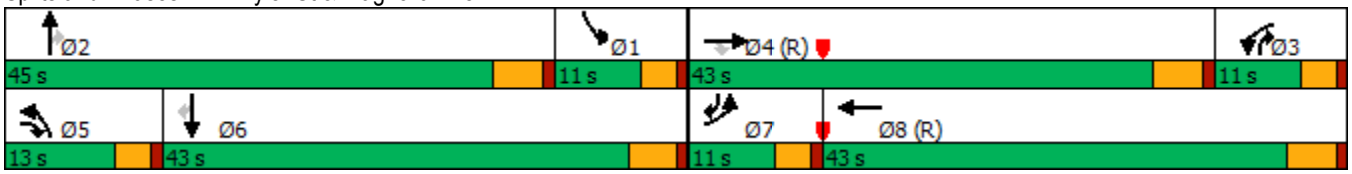
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	5	3	8		5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	43.0	11.0	11.0	43.0		11.0	40.0	11.0	11.0	43.0	11.0
Total Split (s)	11.0	43.0	13.0	11.0	43.0		13.0	45.0	11.0	11.0	43.0	11.0
Total Split (%)	10.0%	39.1%	11.8%	10.0%	39.1%		11.8%	40.9%	10.0%	10.0%	39.1%	10.0%
Maximum Green (s)	7.0	38.0	9.0	7.0	38.0		9.0	40.0	7.0	7.0	38.0	7.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
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	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		31.0			31.0			28.0			31.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effct Green (s)	8.4	54.9	64.8	7.0	53.5		9.0	26.5	38.5	8.0	21.2	34.6
Actuated g/C Ratio	0.08	0.50	0.59	0.06	0.49		0.08	0.24	0.35	0.07	0.19	0.31
v/c Ratio	0.48	0.18	0.11	0.56	0.15		0.73	0.53	0.31	0.13	0.54	0.19
Control Delay	43.5	6.6	3.8	42.5	0.7		53.5	32.0	5.9	37.7	32.1	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	6.6	3.8	42.5	0.7		53.5	32.0	5.9	37.7	32.1	4.5
LOS	D	A	A	D	A		D	C	A	D	C	A
Approach Delay		12.8			11.3			30.8			27.9	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	30	12	0	43	0		74	164	4	10	127	0
Queue Length 95th (ft)	68	127	71	74	1		#113	208	0	26	50	0
Internal Link Dist (ft)		624			360			571			1368	
Turn Bay Length (ft)	130		100	150			245			170		160
Base Capacity (vph)	261	2535	982	218	2443		280	1849	696	249	1756	572
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.18	0.11	0.56	0.15		0.73	0.35	0.31	0.13	0.30	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 22.7		Intersection LOS: C	
Intersection Capacity Utilization 47.0%		ICU Level of Service A	
Analysis Period (min) 15			

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Tyler St & Magnolia Ave

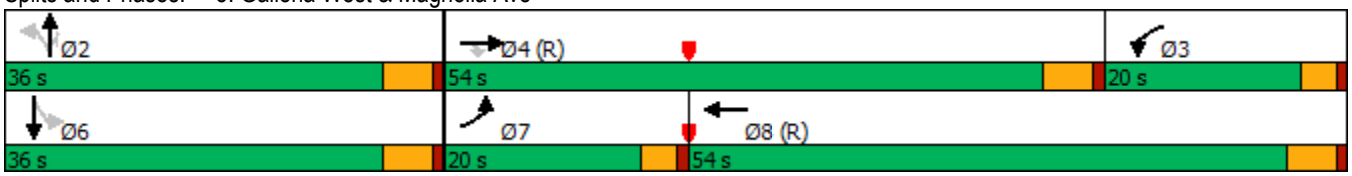


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	593	37	21	490	13	1	1	9	7	0	5
Future Volume (vph)	25	593	37	21	490	13	1	1	9	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		175	125		0	0		75	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.944	
Flt Protected	0.950			0.950			0.950				0.972	
Satd. Flow (prot)	1770	5085	1583	1770	5065	0	1770	1863	1583	0	1709	0
Flt Permitted	0.950			0.950			0.750				0.831	
Satd. Flow (perm)	1770	5085	1583	1770	5065	0	1397	1863	1583	0	1461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69		4				109		109	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		440			380			353			241	
Travel Time (s)		7.5			6.5			9.6			6.6	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	26	611	38	22	505	13	1	1	9	7	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	611	38	22	518	0	1	1	9	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	30.0	30.0	11.0	23.0		36.0	36.0	36.0	12.0	12.0	
Total Split (s)	20.0	54.0	54.0	20.0	54.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	18.2%	49.1%	49.1%	18.2%	49.1%		32.7%	32.7%	32.7%	32.7%	32.7%	
Maximum Green (s)	16.0	49.0	49.0	16.0	49.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	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)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		18.0	18.0		11.0		24.0	24.0	24.0			
Pedestrian Calls (#/hr)		5	5		5		5	5	5			
Act Effct Green (s)	7.6	90.4	90.4	10.6	90.2		11.8	11.8	11.8		11.8	
Actuated g/C Ratio	0.07	0.82	0.82	0.10	0.82		0.11	0.11	0.11		0.11	
v/c Ratio	0.21	0.15	0.03	0.13	0.12		0.01	0.01	0.03		0.05	
Control Delay	58.6	4.4	0.9	27.2	0.2		36.0	36.0	0.2		0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	58.6	4.4	0.9	27.2	0.2		36.0	36.0	0.2		0.3	
LOS	E	A	A	C	A		D	D	A		A	
Approach Delay		6.3			1.3			6.7			0.3	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	18	0	0	15	0		1	1	0		0	
Queue Length 95th (ft)	51	79	5	38	1		5	5	0		0	
Internal Link Dist (ft)		360			300			273			161	
Turn Bay Length (ft)	80		175	125					75			
Base Capacity (vph)	257	4179	1313	257	4152		393	525	524		490	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.10	0.15	0.03	0.09	0.12		0.00	0.00	0.02		0.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.21			
Intersection Signal Delay: 4.1		Intersection LOS: A	
Intersection Capacity Utilization 35.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Galleria West & Magnolia Ave

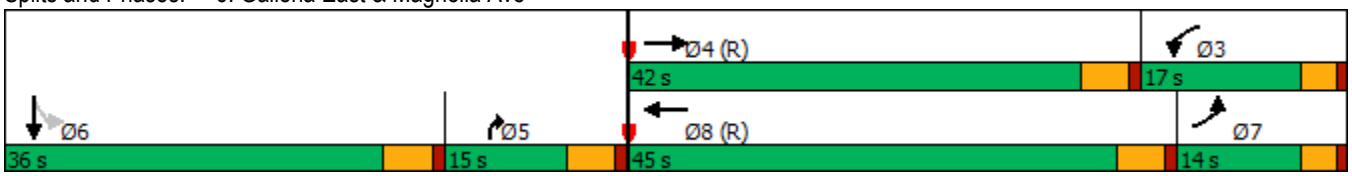


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	604	3	17	518	16	0	0	8	3	0	4
Future Volume (vph)	6	604	3	17	518	16	0	0	8	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		165	130		0	0		0	0		0
Storage Lanes	1		1	1		0	0		2	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.923	
Flt Protected	0.950			0.950							0.979	
Satd. Flow (prot)	1770	5085	1583	1770	5065	0	0	0	2787	0	1683	0
Flt Permitted	0.950			0.950							0.979	
Satd. Flow (perm)	1770	5085	1583	1770	5065	0	0	0	2787	0	1683	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			159		4						109	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		380			506			335			173	
Travel Time (s)		6.5			8.6			9.1			4.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	6	616	3	17	529	16	0	0	8	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	616	3	17	545	0	0	0	8	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2				1	1	2	
Detector Template	Left	Thru	Right	Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100				20	20	100	
Trailing Detector (ft)	0	0	0	0	0				0	0	0	
Detector 1 Position(ft)	0	0	0	0	0				0	0	0	
Detector 1 Size(ft)	20	6	20	20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot	NA	Free	Prot	NA				Prot	Perm	NA	
Protected Phases	7	4		3	8				5		6	
Permitted Phases			Free							6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8				5	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	19.0				12.0	36.0	36.0	
Total Split (s)	14.0	42.0		17.0	45.0				15.0	36.0	36.0	
Total Split (%)	12.7%	38.2%		15.5%	40.9%				13.6%	32.7%	32.7%	
Maximum Green (s)	10.0	37.0		13.0	40.0				10.0	31.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0				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	
Total Lost Time (s)	4.0	5.0		4.0	5.0				5.0		5.0	
Lead/Lag	Lag	Lead		Lag	Lead				Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max				None	Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		11.0			7.0					24.0	24.0	
Pedestrian Calls (#/hr)		5			5					5	5	
Act Effct Green (s)	7.0	51.4	110.0	7.6	54.2				7.0		41.2	
Actuated g/C Ratio	0.06	0.47	1.00	0.07	0.49				0.06		0.37	
v/c Ratio	0.05	0.26	0.00	0.14	0.22				0.05		0.01	
Control Delay	44.7	6.7	0.0	43.6	6.2				49.0		0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0				0.0		0.0	
Total Delay	44.7	6.7	0.0	43.6	6.2				49.0		0.0	
LOS	D	A	A	D	A				D		A	
Approach Delay		7.1			7.3			49.0				
Approach LOS		A			A			D				
Queue Length 50th (ft)	4	41	0	12	78				2		0	
Queue Length 95th (ft)	19	82	0	37	15				12		0	
Internal Link Dist (ft)		300			426			255			93	
Turn Bay Length (ft)	100		165	130								
Base Capacity (vph)	160	2376	1583	209	2499				253		697	
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	0.04	0.26	0.00	0.08	0.22				0.03		0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 77 (70%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 35.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Galleria East & Magnolia Ave

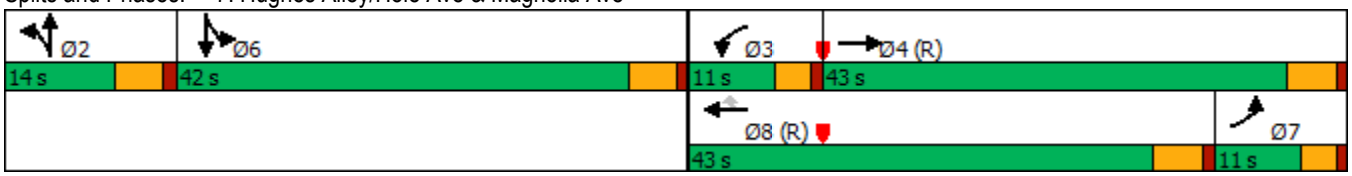


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	623	9	24	466	281	7	13	13	233	11	11
Future Volume (vph)	29	623	9	24	466	281	7	13	13	233	11	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		110	0		0	100		0
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	0.91	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.998				0.850		0.925			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5075	0	3433	5085	1583	1770	1723	0	3433	1723	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5075	0	3433	5085	1583	1770	1723	0	3433	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				299		14			12	
Link Speed (mph)		40			45			40			40	
Link Distance (ft)		506			714			431			1963	
Travel Time (s)		8.6			10.8			7.3			33.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	31	663	10	26	496	299	7	14	14	248	12	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	673	0	26	496	299	7	28	0	248	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

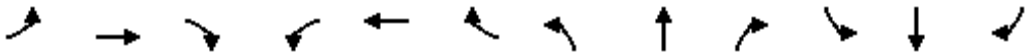
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	33.0	33.0	12.0	12.0		40.0	40.0	
Total Split (s)	11.0	43.0		11.0	43.0	43.0	14.0	14.0		42.0	42.0	
Total Split (%)	10.0%	39.1%		10.0%	39.1%	39.1%	12.7%	12.7%		38.2%	38.2%	
Maximum Green (s)	7.0	38.0		7.0	38.0	38.0	9.0	9.0		37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		None	None	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		14.0			21.0	21.0				28.0	28.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	7.0	62.4		7.1	62.5	62.5	9.0	9.0		16.9	16.9	
Actuated g/C Ratio	0.06	0.57		0.06	0.57	0.57	0.08	0.08		0.15	0.15	
v/c Ratio	0.14	0.23		0.12	0.17	0.29	0.05	0.18		0.47	0.09	
Control Delay	27.7	2.5		49.8	14.0	3.2	47.6	33.1		31.2	18.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	27.7	2.5		49.8	14.0	3.2	47.6	33.1		31.2	18.0	
LOS	C	A		D	B	A	D	C		C	B	
Approach Delay		3.6			11.2			36.0			30.0	
Approach LOS		A			B			D			C	
Queue Length 50th (ft)	11	16		9	59	0	5	9		96	11	
Queue Length 95th (ft)	22	18		23	118	56	19	38		106	31	
Internal Link Dist (ft)		426			634			351			1883	
Turn Bay Length (ft)	125			150		110				100		
Base Capacity (vph)	218	2879		220	2888	1028	144	153		1154	587	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.23		0.12	0.17	0.29	0.05	0.18		0.21	0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 82 (75%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 40.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 7: Hughes Alley/Hole Ave & Magnolia Ave



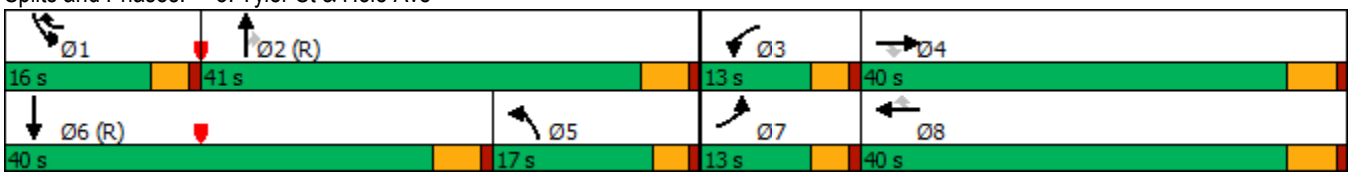
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	247	190	25	142	74	182	422	174	67	427	31
Future Volume (vph)	33	247	190	25	142	74	182	422	174	67	427	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	130		130	130		0	100		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	0.91
Frt			0.850			0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5034	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5034	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			198			109			181		11	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		702			1963			1448			757	
Travel Time (s)		12.0			33.5			24.7			12.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	34	257	198	26	148	77	190	440	181	70	445	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	257	198	26	148	77	190	440	181	70	477	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			



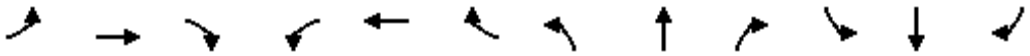
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	36.0	36.0	11.0	33.0	11.0	11.0	33.0	33.0	11.0	33.0	
Total Split (s)	13.0	40.0	40.0	13.0	40.0	16.0	17.0	41.0	41.0	16.0	40.0	
Total Split (%)	11.8%	36.4%	36.4%	11.8%	36.4%	14.5%	15.5%	37.3%	37.3%	14.5%	36.4%	
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	12.0	13.0	36.0	36.0	12.0	35.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
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	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		24.0	24.0		21.0			21.0	21.0		21.0	
Pedestrian Calls (#/hr)		5	5		5			5	5		5	
Act Effct Green (s)	7.8	16.4	16.4	7.6	16.1	31.0	13.0	64.8	64.8	9.9	59.5	
Actuated g/C Ratio	0.07	0.15	0.15	0.07	0.15	0.28	0.12	0.59	0.59	0.09	0.54	
v/c Ratio	0.27	0.49	0.49	0.21	0.29	0.15	0.47	0.21	0.18	0.44	0.17	
Control Delay	53.7	44.8	9.2	55.6	40.4	2.9	21.0	5.1	1.6	55.5	15.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.7	44.8	9.2	55.6	40.4	2.9	21.0	5.1	1.6	55.5	15.1	
LOS	D	D	A	E	D	A	C	A	A	E	B	
Approach Delay		31.0			30.5			8.0			20.2	
Approach LOS		C			C			A			C	
Queue Length 50th (ft)	23	91	0	19	52	0	25	32	0	48	59	
Queue Length 95th (ft)	55	109	54	48	58	1	42	45	3	91	113	
Internal Link Dist (ft)		622			1883			1368			677	
Turn Bay Length (ft)	100		100	130		130	130			100		
Base Capacity (vph)	144	1126	638	144	1126	556	405	2083	1006	197	2726	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.24	0.23	0.31	0.18	0.13	0.14	0.47	0.21	0.18	0.36	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 32 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay: 19.3		Intersection LOS: B	
Intersection Capacity Utilization 45.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Tyler St & Hole Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	5	24	3	8	46	1011	48	10	718	3
Future Volume (vph)	5	2	5	24	3	8	46	1011	48	10	718	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		115	215		0	170		0
Storage Lanes	0		0	1		1	1		0	2		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.91	0.91
Frt		0.944				0.850		0.993			0.999	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	1723	0	1770	1863	1583	1770	6363	0	3433	5080	0
Flt Permitted		0.905		0.750			0.950			0.950		
Satd. Flow (perm)	0	1591	0	1397	1863	1583	1770	6363	0	3433	5080	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				109		10			1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		221			241			548			651	
Travel Time (s)		6.0			6.6			9.3			11.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	2	5	25	3	8	47	1042	49	10	740	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	25	3	8	47	1091	0	10	743	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						

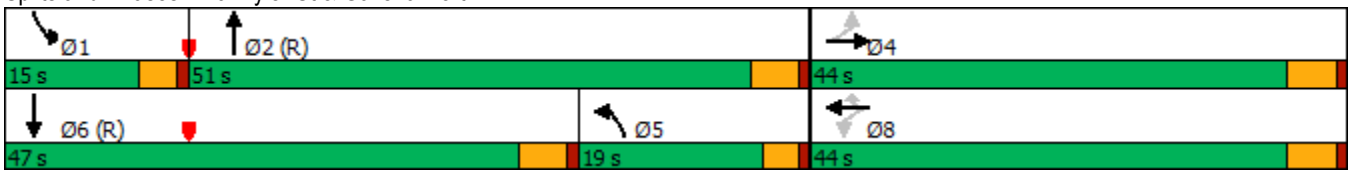


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	40.0	40.0		43.0	43.0	43.0	11.0	30.0		11.0	23.0	
Total Split (s)	44.0	44.0		44.0	44.0	44.0	19.0	51.0		15.0	47.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	17.3%	46.4%		13.6%	42.7%	
Maximum Green (s)	39.0	39.0		39.0	39.0	39.0	15.0	46.0		11.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
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	
Total Lost Time (s)		5.0		5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	28.0	28.0		31.0	31.0	31.0		18.0			11.0	
Pedestrian Calls (#/hr)	5	5		5	5	5		5			5	
Act Effct Green (s)		13.6		13.6	13.6	13.6	13.4	91.0		7.0	77.0	
Actuated g/C Ratio		0.12		0.12	0.12	0.12	0.12	0.83		0.06	0.70	
v/c Ratio		0.06		0.15	0.01	0.03	0.22	0.21		0.05	0.21	
Control Delay		26.8		39.4	33.3	0.1	30.7	1.9		38.4	11.3	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		26.8		39.4	33.3	0.1	30.7	1.9		38.4	11.3	
LOS		C		D	C	A	C	A		D	B	
Approach Delay		26.8			30.2			3.1			11.7	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		5		17	2	0	30	29		2	34	
Queue Length 95th (ft)		17		31	8	0	52	14		m0	223	
Internal Link Dist (ft)		141			161			468			571	
Turn Bay Length (ft)						115	215			170		
Base Capacity (vph)		567		495	660	631	241	5267		343	3557	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.02		0.05	0.00	0.01	0.20	0.21		0.03	0.21	

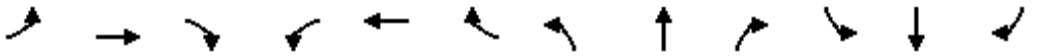
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 96 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 7.1		Intersection LOS: A	
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 9: Tyler St & Galleria North



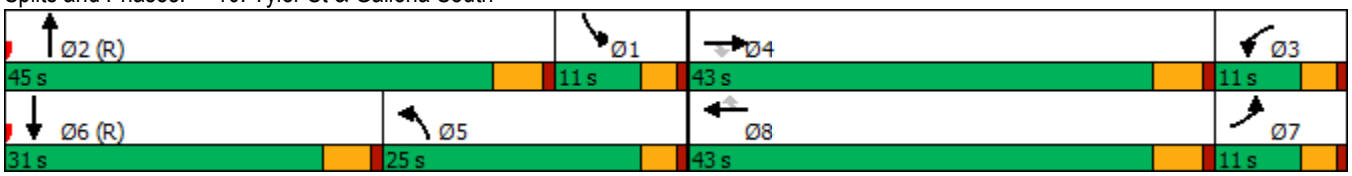
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	3	20	35	4	6	426	1106	20	15	669	38
Future Volume (vph)	33	3	20	35	4	6	426	1106	20	15	669	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		50	240		0	155		0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.86	0.86	1.00	0.86	0.86
Frt			0.850			0.850		0.997			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	3433	6389	0	1770	6357	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	3433	6389	0	1770	6357	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149			149		3			10	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		267			252			595			487	
Travel Time (s)		7.3			6.9			10.1			8.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	34	3	21	36	4	6	439	1140	21	15	690	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	3	21	36	4	6	439	1161	0	15	729	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						

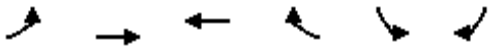


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	12.0	12.0	11.0	43.0	43.0	11.0	26.0		11.0	30.0	
Total Split (s)	11.0	43.0	43.0	11.0	43.0	43.0	25.0	45.0		11.0	31.0	
Total Split (%)	10.0%	39.1%	39.1%	10.0%	39.1%	39.1%	22.7%	40.9%		10.0%	28.2%	
Maximum Green (s)	7.0	38.0	38.0	7.0	38.0	38.0	21.0	40.0		7.0	26.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	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	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)					7.0	7.0		7.0			7.0	
Flash Dont Walk (s)					31.0	31.0		14.0			18.0	
Pedestrian Calls (#/hr)					5	5		5			5	
Act Effct Green (s)	9.7	7.0	7.0	13.5	13.2	13.2	18.6	82.3		7.0	62.1	
Actuated g/C Ratio	0.09	0.06	0.06	0.12	0.12	0.12	0.17	0.75		0.06	0.56	
v/c Ratio	0.22	0.03	0.09	0.09	0.02	0.02	0.76	0.24		0.13	0.20	
Control Delay	50.5	49.0	0.7	38.3	34.5	0.2	52.4	9.9		53.6	1.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.5	49.0	0.7	38.3	34.5	0.2	52.4	9.9		53.6	1.3	
LOS	D	D	A	D	C	A	D	A		D	A	
Approach Delay		32.4			33.0			21.6			2.3	
Approach LOS		C			C			C			A	
Queue Length 50th (ft)	20	2	0	12	3	0	153	63		11	7	
Queue Length 95th (ft)	56	12	0	20	10	0	204	217		34	9	
Internal Link Dist (ft)		187			172			515			407	
Turn Bay Length (ft)				150		50	240			155		
Base Capacity (vph)	156	643	644	421	643	644	655	4779		112	3594	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.22	0.00	0.03	0.09	0.01	0.01	0.67	0.24		0.13	0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 95 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 16.2		Intersection LOS: B	
Intersection Capacity Utilization 42.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Tyler St & Galleria South





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	622	588	13	0	8
Future Volume (vph)	0	622	588	13	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.997			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5070	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5070	0	0	1611
Link Speed (mph)		40	40		25	
Link Distance (ft)		546	704		334	
Travel Time (s)		9.3	12.0		9.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	0	707	668	15	0	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	707	683	0	0	9
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.6%		ICU Level of Service A	
Analysis Period (min) 15			

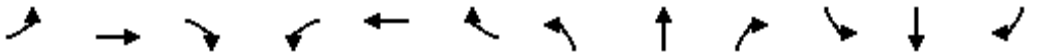
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	781	30	61	756	100	124	134	125	89	56	146
Future Volume (veh/h)	210	781	30	61	756	100	124	134	125	89	56	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	216	805	31	63	779	103	128	138	129	92	58	151
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1554	60	175	1305	172	197	194	181	116	307	274
Arrive On Green	0.14	0.45	0.45	0.10	0.41	0.41	0.11	0.22	0.22	0.07	0.17	0.17
Sat Flow, veh/h	1781	3489	134	1781	3155	417	1781	889	831	1781	1777	1585
Grp Volume(v), veh/h	216	410	426	63	439	443	128	0	267	92	58	151
Grp Sat Flow(s),veh/h/ln	1781	1777	1846	1781	1777	1795	1781	0	1721	1781	1777	1585
Q Serve(g_s), s	13.1	18.3	18.3	3.6	21.1	21.2	7.6	0.0	15.8	5.6	3.1	9.6
Cycle Q Clear(g_c), s	13.1	18.3	18.3	3.6	21.1	21.2	7.6	0.0	15.8	5.6	3.1	9.6
Prop In Lane	1.00		0.07	1.00		0.23	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	248	792	822	175	735	742	197	0	375	116	307	274
V/C Ratio(X)	0.87	0.52	0.52	0.36	0.60	0.60	0.65	0.00	0.71	0.79	0.19	0.55
Avail Cap(c_a), veh/h	340	792	822	175	735	742	243	0	375	162	307	274
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	22.0	22.0	46.3	25.1	25.1	46.9	0.0	39.8	50.7	38.9	41.6
Incr Delay (d2), s/veh	16.3	2.4	2.3	1.2	3.6	3.5	4.2	0.0	10.9	16.2	1.4	7.8
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	6.8	7.8	8.1	1.6	9.2	9.3	3.5	0.0	7.6	3.0	1.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	24.4	24.3	47.6	28.7	28.6	51.1	0.0	50.7	66.9	40.3	49.4
LnGrp LOS	E	C	C	D	C	C	D	A	D	E	D	D
Approach Vol, veh/h		1052			945			395			301	
Approach Delay, s/veh		32.2			29.9			50.8			53.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	29.0	15.8	54.0	16.2	24.0	19.3	50.5
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	24.0	9.0	* 49	15.0	19.0	21.0	37.0
Max Q Clear Time (g_c+I1), s	7.6	17.8	5.6	20.3	9.6	11.6	15.1	23.2
Green Ext Time (p_c), s	0.0	0.7	0.0	5.4	0.1	0.6	0.3	4.5

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

Notes

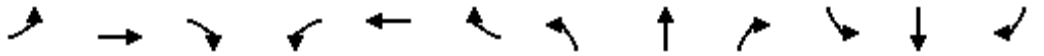
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	968	39	91	809	8	46	0	76	0	0	9
Future Volume (veh/h)	22	968	39	91	809	8	46	0	76	0	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	1030	41	97	861	9	49	0	81	0	0	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	2336	93	389	1998	21	334	357	303	65	357	303
Arrive On Green	0.13	0.46	0.46	0.44	1.00	1.00	0.19	0.00	0.19	0.00	0.00	0.19
Sat Flow, veh/h	1781	5038	200	1781	3603	38	1405	1870	1585	1317	1870	1585
Grp Volume(v), veh/h	23	696	375	97	425	445	49	0	81	0	0	10
Grp Sat Flow(s),veh/h/ln	1781	1702	1834	1781	1777	1864	1405	1870	1585	1317	1870	1585
Q Serve(g_s), s	1.3	15.2	15.2	3.8	0.0	0.0	3.2	0.0	4.8	0.0	0.0	0.6
Cycle Q Clear(g_c), s	1.3	15.2	15.2	3.8	0.0	0.0	3.2	0.0	4.8	0.0	0.0	0.6
Prop In Lane	1.00		0.11	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	1578	850	389	985	1033	334	357	303	65	357	303
V/C Ratio(X)	0.10	0.44	0.44	0.25	0.43	0.43	0.15	0.00	0.27	0.00	0.00	0.03
Avail Cap(c_a), veh/h	227	1578	850	389	985	1033	334	357	303	65	357	303
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	19.9	19.9	25.3	0.0	0.0	37.3	0.0	37.9	0.0	0.0	36.2
Incr Delay (d2), s/veh	0.2	0.9	1.7	0.3	1.2	1.2	0.9	0.0	2.2	0.0	0.0	0.2
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	0.6	5.9	6.5	1.5	0.3	0.3	1.2	0.0	2.0	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	20.8	21.6	25.6	1.2	1.2	38.2	0.0	40.1	0.0	0.0	36.4
LnGrp LOS	D	C	C	C	A	A	D	A	D	A	A	D
Approach Vol, veh/h		1094			967			130			10	
Approach Delay, s/veh		21.5			3.6			39.4			36.4	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	28.0	56.0		26.0	18.0	66.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		21.0	24.0	51.0		21.0	14.0	61.0				
Max Q Clear Time (g_c+I1), s		6.8	5.8	17.2		2.6	3.3	2.0				
Green Ext Time (p_c), s		0.3	0.2	7.9		0.0	0.0	6.0				

Intersection Summary												
HCM 6th Ctrl Delay			14.8									
HCM 6th LOS			B									



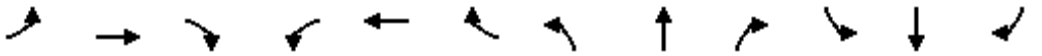
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1001	46	139	848	13	46	13	83	11	2	23
Future Volume (veh/h)	45	1001	46	139	848	13	46	13	83	11	2	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	1032	47	143	874	13	47	13	86	11	2	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	2420	110	175	1777	793	452	62	409	383	36	431
Arrive On Green	0.15	0.97	0.97	0.07	0.34	0.34	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	5006	228	1781	3554	1585	1385	212	1405	1296	123	1480
Grp Volume(v), veh/h	46	701	378	143	874	13	47	0	99	11	0	26
Grp Sat Flow(s),veh/h/ln	1781	1702	1829	1781	1777	1585	1385	0	1617	1296	0	1604
Q Serve(g_s), s	2.6	1.3	1.3	8.7	21.5	0.6	2.8	0.0	5.1	0.7	0.0	1.3
Cycle Q Clear(g_c), s	2.6	1.3	1.3	8.7	21.5	0.6	4.1	0.0	5.1	5.8	0.0	1.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.87	1.00		0.92
Lane Grp Cap(c), veh/h	130	1646	885	175	1777	793	452	0	471	383	0	467
V/C Ratio(X)	0.36	0.43	0.43	0.82	0.49	0.02	0.10	0.00	0.21	0.03	0.00	0.06
Avail Cap(c_a), veh/h	146	1646	885	340	1777	793	452	0	471	383	0	467
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	1.0	1.0	50.4	25.4	18.5	29.6	0.0	29.5	31.6	0.0	28.1
Incr Delay (d2), s/veh	1.5	0.7	1.4	8.9	1.0	0.0	0.5	0.0	1.0	0.1	0.0	0.2
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	1.1	0.4	0.6	4.3	9.7	0.2	1.0	0.0	2.1	0.2	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	1.7	2.3	59.3	26.4	18.5	30.0	0.0	30.5	31.8	0.0	28.3
LnGrp LOS	D	A	A	E	C	B	C	A	C	C	A	C
Approach Vol, veh/h		1125			1030			146			37	
Approach Delay, s/veh		3.7			30.9			30.3			29.4	
Approach LOS		A			C			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		37.0	14.8	58.2		37.0	13.0	60.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	5.0	* 5				
Max Green Setting (Gmax), s		32.0	21.0	43.0		32.0	9.0	* 55				
Max Q Clear Time (g_c+I1), s		7.1	10.7	3.3		7.8	4.6	23.5				
Green Ext Time (p_c), s		0.7	0.2	8.2		0.1	0.0	6.6				

Intersection Summary												
HCM 6th Ctrl Delay			17.8									
HCM 6th LOS			B									

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	668	255	279	558	160	285	742	328	231	655	145
Future Volume (veh/h)	152	668	255	279	558	160	285	742	328	231	655	145
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	682	260	285	569	163	291	757	335	236	668	148
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	1764	686	674	1929	540	301	1023	627	299	973	402
Arrive On Green	0.02	0.11	0.11	0.39	0.97	0.97	0.17	0.40	0.40	0.03	0.06	0.06
Sat Flow, veh/h	3456	5106	1585	3456	3965	1110	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	155	682	260	285	487	245	291	757	335	236	668	148
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1671	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	4.9	13.6	6.8	6.6	0.6	0.6	9.2	13.9	3.7	7.5	14.1	6.5
Cycle Q Clear(g_c), s	4.9	13.6	6.8	6.6	0.6	0.6	9.2	13.9	3.7	7.5	14.1	6.5
Prop In Lane	1.00		1.00	1.00		0.66	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	1764	686	674	1656	813	301	1023	627	299	973	402
V/C Ratio(X)	0.71	0.39	0.38	0.42	0.29	0.30	0.97	0.74	0.53	0.79	0.69	0.37
Avail Cap(c_a), veh/h	251	1764	686	674	1656	813	301	1671	828	314	1764	648
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	0.96	0.96	0.96	0.90	0.90	0.90
Uniform Delay (d), s/veh	52.9	37.9	30.6	29.0	0.8	0.8	45.3	30.5	8.3	52.4	48.3	21.3
Incr Delay (d2), s/veh	7.7	0.6	1.6	0.4	0.4	0.9	41.9	1.0	0.7	11.2	0.8	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	2.4	6.3	6.6	2.5	0.3	0.4	5.2	4.6	2.7	3.8	6.5	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.5	38.6	32.2	29.4	1.2	1.7	87.2	31.6	9.0	63.6	49.1	21.8
LnGrp LOS	E	D	C	C	A	A	F	C	A	E	D	C
Approach Vol, veh/h		1097			1017			1383			1052	
Approach Delay, s/veh		40.2			9.2			37.8			48.5	
Approach LOS		D			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	27.0	26.5	43.0	14.6	26.0	10.9	58.5
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	10.0	36.0	8.0	* 38	8.0	* 38	8.0	38.0
Max Q Clear Time (g_c+I1), s	9.5	15.9	8.6	15.6	11.2	16.1	6.9	2.6
Green Ext Time (p_c), s	0.0	6.1	0.0	5.5	0.0	4.9	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

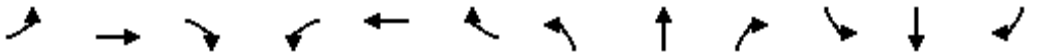
Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	924	205	50	833	41	93	8	70	62	16	97
Future Volume (veh/h)	112	924	205	50	833	41	93	8	70	62	16	97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	1015	225	55	915	45	102	9	77	68	18	107
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	638	2182	677	524	1813	89	202	283	240	113	34	128
Arrive On Green	0.72	0.85	0.85	0.59	0.73	0.73	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5106	1585	1781	4986	245	1266	1870	1585	456	223	845
Grp Volume(v), veh/h	123	1015	225	55	624	336	102	9	77	193	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1826	1266	1870	1585	1524	0	0
Q Serve(g_s), s	2.5	5.3	3.2	1.5	8.7	8.7	0.0	0.5	4.8	11.2	0.0	0.0
Cycle Q Clear(g_c), s	2.5	5.3	3.2	1.5	8.7	8.7	13.3	0.5	4.8	13.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	0.35		0.55
Lane Grp Cap(c), veh/h	638	2182	677	524	1238	664	202	283	240	275	0	0
V/C Ratio(X)	0.19	0.47	0.33	0.10	0.50	0.51	0.50	0.03	0.32	0.70	0.00	0.00
Avail Cap(c_a), veh/h	638	2182	677	524	1238	664	425	612	519	538	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.88	0.88	0.88	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.4	5.0	4.8	16.3	10.7	10.7	45.3	39.8	41.7	45.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.6	1.2	0.1	1.3	2.4	1.9	0.0	0.8	3.3	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	0.9	1.4	1.1	0.6	2.6	3.0	2.8	0.2	1.9	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	5.6	6.0	16.3	12.0	13.1	47.2	39.9	42.4	48.5	0.0	0.0
LnGrp LOS	B	A	A	B	B	B	D	D	D	D	A	A
Approach Vol, veh/h		1363			1015			188			193	
Approach Delay, s/veh		6.1			12.6			44.9			48.5	
Approach LOS		A			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.6	36.4	52.0		21.6	43.4	45.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		36.0	13.0	47.0		36.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s		15.3	3.5	7.3		15.5	4.5	10.7				
Green Ext Time (p_c), s		0.6	0.1	9.3		1.1	0.2	6.7				

Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	996	41	104	922	22	0	0	122	20	0	35
Future Volume (veh/h)	31	996	41	104	922	22	0	0	122	20	0	35
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	1870	1870	1870	1870	1870	1870	0	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1048	0	109	971	23	0	0	128	21	0	37
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, %	2	2	2	2	2	2	0	0	2	2	2	2
Cap, veh/h	372	1625		486	1959	46	0	0	0	0	0	0
Arrive On Green	0.42	0.64	0.00	0.55	0.76	0.76	0.00	0.00	0.00	0.28	0.00	0.28
Sat Flow, veh/h	1781	5106	1585	1781	5131	121		0		0	0	0
Grp Volume(v), veh/h	33	1048	0	109	644	350		0.0		58	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1849				0	0	0
Q Serve(g_s), s	1.2	13.9	0.0	3.5	7.9	7.9				0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	13.9	0.0	3.5	7.9	7.9				0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07				0.36		0.64
Lane Grp Cap(c), veh/h	372	1625		486	1300	706				0	0	0
V/C Ratio(X)	0.09	0.65		0.22	0.50	0.50				0.00	0.00	0.00
Avail Cap(c_a), veh/h	372	1625		486	1300	706				0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.00	0.90	0.90	0.90				1.00	0.00	0.00
Uniform Delay (d), s/veh	25.7	16.2	0.0	19.0	9.0	9.0				28.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	1.9	0.0	0.2	1.2	2.2				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	0.5	3.9	0.0	1.4	2.3	2.7				1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	18.1	0.0	19.2	10.2	11.2				28.4	0.0	0.0
LnGrp LOS	C	B		B	B	B				C	A	A
Approach Vol, veh/h		1081	A		1103						58	
Approach Delay, s/veh		18.3			11.4						28.4	
Approach LOS		B			B						C	

Timer - Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			34.0	40.0		36.0	27.0	47.0				
Change Period (Y+Rc), s			4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s			14.0	35.0		31.0	7.0	42.0				
Max Q Clear Time (g_c+I1), s			5.5	15.9		2.0	3.2	9.9				
Green Ext Time (p_c), s			0.1	6.9		0.3	0.0	7.1				

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1023	33	173	853	427	55	80	123	549	117	63
Future Volume (veh/h)	66	1023	33	173	853	427	55	80	123	549	117	63
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	1088	35	184	907	454	59	85	131	584	124	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	560	2034	65	245	1532	476	259	97	149	728	241	130
Arrive On Green	0.32	0.80	0.80	0.07	0.30	0.30	0.15	0.15	0.15	0.07	0.07	0.07
Sat Flow, veh/h	3456	5082	163	3456	5106	1585	1781	664	1023	3456	1142	617
Grp Volume(v), veh/h	70	729	394	184	907	454	59	0	216	584	0	191
Grp Sat Flow(s),veh/h/ln	1728	1702	1841	1728	1702	1585	1781	0	1686	1728	0	1759
Q Serve(g_s), s	1.6	8.2	8.2	5.7	16.6	30.9	3.2	0.0	13.8	18.3	0.0	11.5
Cycle Q Clear(g_c), s	1.6	8.2	8.2	5.7	16.6	30.9	3.2	0.0	13.8	18.3	0.0	11.5
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.61	1.00		0.35
Lane Grp Cap(c), veh/h	560	1362	737	245	1532	476	259	0	245	728	0	371
V/C Ratio(X)	0.13	0.53	0.54	0.75	0.59	0.95	0.23	0.00	0.88	0.80	0.00	0.52
Avail Cap(c_a), veh/h	560	1362	737	283	1532	476	259	0	245	1100	0	560
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.75	0.75	0.75	1.00	1.00	1.00	1.00	0.00	1.00	0.83	0.00	0.83
Uniform Delay (d), s/veh	31.7	7.4	7.4	50.2	32.8	37.8	41.5	0.0	46.1	48.9	0.0	45.8
Incr Delay (d2), s/veh	0.1	1.1	2.1	9.3	1.7	31.4	2.0	0.0	33.4	2.1	0.0	0.9
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	0.6	2.2	2.5	2.7	6.8	15.5	1.5	0.0	7.9	8.7	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	8.5	9.5	59.5	34.5	69.2	43.6	0.0	79.5	51.1	0.0	46.7
LnGrp LOS	C	A	A	E	C	E	D	A	E	D	A	D
Approach Vol, veh/h		1193			1545			275			775	
Approach Delay, s/veh		10.2			47.6			71.8			50.0	
Approach LOS		B			D			E			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	21.0	11.8	49.0	28.2	22.8	38.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	5.0	* 5
Max Green Setting (Gmax), s	16.0	9.0	31.0	35.0	7.0	* 33
Max Q Clear Time (g_c+I1), s	15.8	7.7	10.2	20.3	3.6	32.9
Green Ext Time (p_c), s	0.0	0.1	7.2	2.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	370	247	158	419	225	308	563	103	145	566	67
Future Volume (veh/h)	91	370	247	158	419	225	308	563	103	145	566	67
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	394	263	168	446	239	328	599	0	154	602	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	607	271	201	796	799	397	905		499	2191	
Arrive On Green	0.07	0.17	0.17	0.04	0.07	0.07	0.11	0.25	0.00	0.28	0.43	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	1781	5274	0
Grp Volume(v), veh/h	97	394	263	168	446	239	328	599	0	154	602	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1781	1702	0
Q Serve(g_s), s	5.9	11.4	13.8	10.3	13.3	2.2	10.2	16.6	0.0	7.5	8.4	0.0
Cycle Q Clear(g_c), s	5.9	11.4	13.8	10.3	13.3	2.2	10.2	16.6	0.0	7.5	8.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	122	607	271	201	796	799	397	905		499	2191	
V/C Ratio(X)	0.79	0.65	0.97	0.84	0.56	0.30	0.83	0.66		0.31	0.27	
Avail Cap(c_a), veh/h	194	1001	447	275	1163	963	503	905		499	2191	
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	0.79	0.79	0.79	0.81	0.81	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.5	42.5	26.4	51.9	45.7	8.1	47.6	36.8	0.0	31.2	20.3	0.0
Incr Delay (d2), s/veh	10.9	1.2	26.5	12.1	0.5	0.2	7.3	3.1	0.0	0.3	0.3	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	2.9	5.0	7.0	5.5	6.4	2.1	4.7	7.4	0.0	3.2	3.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	43.7	52.9	64.0	46.2	8.2	54.9	39.9	0.0	31.5	20.6	0.0
LnGrp LOS	E	D	D	E	D	A	D	D		C	C	
Approach Vol, veh/h		754			853			927	A		756	A
Approach Delay, s/veh		49.2			39.1			45.2			22.9	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.8	33.0	17.4	23.8	16.6	52.2	11.6	29.6
Change Period (Y+Rc), s	5.0	* 5	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	16.0	* 28	17.0	* 31	16.0	28.0	12.0	36.0
Max Q Clear Time (g_c+I1), s	9.5	18.6	12.3	15.8	12.2	10.4	7.9	15.3
Green Ext Time (p_c), s	0.2	2.6	0.2	2.9	0.4	3.6	0.1	3.5

Intersection Summary	
HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Notes

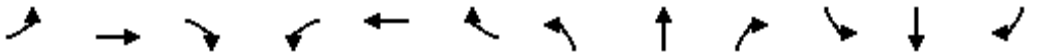
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	10	27	127	6	38	93	1240	99	69	1083	28
Future Volume (veh/h)	42	10	27	127	6	38	93	1240	99	69	1083	28
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	10	28	131	6	39	96	1278	102	71	1116	29
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	36	59	225	211	178	690	2671	213	1119	1907	50
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.39	0.44	0.44	0.65	0.75	0.75
Sat Flow, veh/h	676	320	526	1370	1870	1585	1781	6121	487	3456	5118	133
Grp Volume(v), veh/h	81	0	0	131	6	39	96	1007	373	71	742	403
Grp Sat Flow(s),veh/h/ln	1523	0	0	1370	1870	1585	1781	1609	1783	1728	1702	1846
Q Serve(g_s), s	3.5	0.0	0.0	4.6	0.3	2.5	3.8	16.3	16.4	0.8	10.8	10.8
Cycle Q Clear(g_c), s	5.3	0.0	0.0	9.9	0.3	2.5	3.8	16.3	16.4	0.8	10.8	10.8
Prop In Lane	0.53		0.35	1.00		1.00	1.00		0.27	1.00		0.07
Lane Grp Cap(c), veh/h	222	0	0	225	211	178	690	2106	778	1119	1269	688
V/C Ratio(X)	0.37	0.00	0.00	0.58	0.03	0.22	0.14	0.48	0.48	0.06	0.58	0.59
Avail Cap(c_a), veh/h	607	0	0	581	697	591	690	2106	778	1119	1269	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69
Uniform Delay (d), s/veh	45.6	0.0	0.0	47.6	43.4	44.4	21.8	22.1	22.1	13.3	10.2	10.2
Incr Delay (d2), s/veh	1.0	0.0	0.0	2.4	0.1	0.6	0.1	0.8	2.1	0.0	1.4	2.5
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	2.2	0.0	0.0	3.7	0.2	1.0	1.6	6.0	7.0	0.3	2.9	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	0.0	0.0	50.0	43.5	45.0	21.9	22.9	24.2	13.3	11.5	12.7
LnGrp LOS	D	A	A	D	D	D	C	C	C	B	B	B
Approach Vol, veh/h		81			176			1476			1216	
Approach Delay, s/veh		46.6			48.7			23.1			12.0	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.6	53.0		17.4	46.6	46.0		17.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	48.0		41.0	14.0	41.0		41.0				
Max Q Clear Time (g_c+I1), s	2.8	18.4		7.3	5.8	12.8		11.9				
Green Ext Time (p_c), s	0.0	10.8		0.5	0.1	8.2		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			20.7									
HCM 6th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	75	226	273	45	66	301	1164	151	76	1053	155
Future Volume (veh/h)	216	75	226	273	45	66	301	1164	151	76	1053	155
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	225	78	235	284	47	0	314	1212	157	79	1097	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	254	215	353	119		372	1585	204	564	3158	
Arrive On Green	0.17	0.14	0.14	0.10	0.06	0.00	0.11	0.27	0.27	0.32	0.49	0.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5812	749	1781	6696	0
Grp Volume(v), veh/h	225	78	235	284	47	0	314	1005	364	79	1097	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1609	1736	1781	1609	0
Q Serve(g_s), s	13.1	4.1	11.7	8.8	2.7	0.0	9.8	21.0	21.2	3.5	11.5	0.0
Cycle Q Clear(g_c), s	13.1	4.1	11.7	8.8	2.7	0.0	9.8	21.0	21.2	3.5	11.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		0.00
Lane Grp Cap(c), veh/h	311	254	215	353	119		372	1316	473	564	3158	
V/C Ratio(X)	0.72	0.31	1.09	0.80	0.39		0.84	0.76	0.77	0.14	0.35	
Avail Cap(c_a), veh/h	311	680	576	471	646		377	1316	473	564	3158	
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	42.9	29.0	48.3	49.5	0.0	48.2	36.7	36.8	26.9	17.2	0.0
Incr Delay (d2), s/veh	8.1	0.7	56.6	7.3	2.1	0.0	15.8	4.3	11.4	0.1	0.3	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	6.5	2.0	7.9	4.2	1.3	0.0	5.0	8.5	10.2	1.5	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	43.5	85.5	55.6	51.6	0.0	64.0	41.0	48.2	27.0	17.5	0.0
LnGrp LOS	D	D	F	E	D		E	D	D	C	B	
Approach Vol, veh/h		538			331	A		1683			1176	A
Approach Delay, s/veh		65.0			55.1			46.8			18.1	
Approach LOS		E			E			D			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.8	35.0	15.2	19.9	15.8	59.0	23.2	12.0
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	* 30	15.0	40.0	12.0	25.0	17.0	38.0
Max Q Clear Time (g_c+I1), s	5.5	23.2	10.8	13.7	11.8	13.5	15.1	4.7
Green Ext Time (p_c), s	0.0	4.4	0.4	1.3	0.0	5.5	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	41.1
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1095	982	17	0	18
Future Vol, veh/h	0	1095	982	17	0	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1129	1012	18	0	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	515
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	-	0	432
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	432
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	432
HCM Lane V/C Ratio	-	-	-	0.043
HCM Control Delay (s)	-	-	-	13.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	781	30	61	756	100	124	134	125	89	56	146
Future Volume (vph)	210	781	30	61	756	100	124	134	125	89	56	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	225		0	80		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.994			0.982			0.928			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3518	0	1770	3476	0	1770	1729	0	1770	3157	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3518	0	1770	3476	0	1770	1729	0	1770	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			14			39			151	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		647			586			521			537	
Travel Time (s)		11.0			10.0			8.9			9.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	216	805	31	63	779	103	128	138	129	92	58	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	836	0	63	882	0	128	267	0	92	209	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												

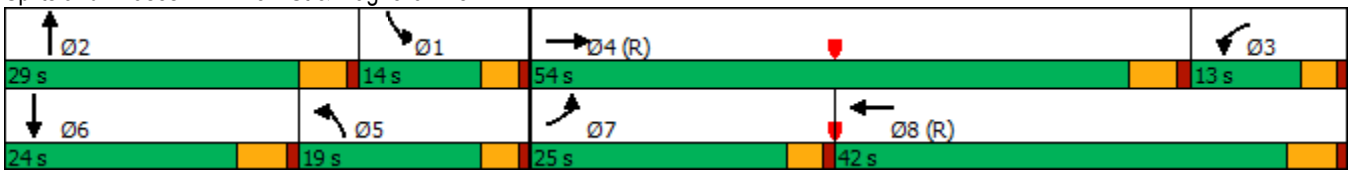
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		11.0	12.0		11.0	23.0	
Total Split (s)	25.0	54.0		13.0	42.0		19.0	29.0		14.0	24.0	
Total Split (%)	22.7%	49.1%		11.8%	38.2%		17.3%	26.4%		12.7%	21.8%	
Maximum Green (s)	21.0	49.0		9.0	37.0		15.0	24.0		10.0	19.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
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	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Walk Time (s)		7.0			7.0						7.0	
Flash Dont Walk (s)		14.0			14.0						11.0	
Pedestrian Calls (#/hr)		5			5						5	
Act Effct Green (s)	17.7	53.1		8.6	41.8		13.5	25.4		9.3	19.0	
Actuated g/C Ratio	0.16	0.48		0.08	0.38		0.12	0.23		0.08	0.17	
v/c Ratio	0.76	0.49		0.46	0.66		0.59	0.62		0.62	0.31	
Control Delay	61.1	21.6		33.3	10.5		56.7	40.1		66.9	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.1	21.6		33.3	10.5		56.7	40.1		66.9	13.9	
LOS	E	C		C	B		E	D		E	B	
Approach Delay		29.7			12.1			45.5			30.1	
Approach LOS		C			B			D			C	
Queue Length 50th (ft)	146	219		45	63		85	148		63	18	
Queue Length 95th (ft)	224	278		75	48		148	240		#121	52	
Internal Link Dist (ft)		567			506			441			457	
Turn Bay Length (ft)	195			225			80			100		
Base Capacity (vph)	337	1700		144	1329		241	429		160	670	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.49		0.44	0.66		0.53	0.62		0.57	0.31	

Intersection Summary

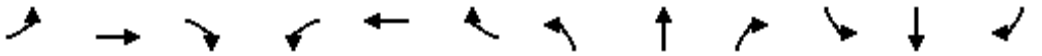
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 72 (65%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 71.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Polk St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	968	39	91	809	8	46	0	76	0	0	9
Future Volume (vph)	22	968	39	91	809	8	46	0	76	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	215		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.998				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5055	0	1770	3532	0	1770	1863	1583	1863	1863	1583
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5055	0	1770	3532	0	1410	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1				337			331
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		357			547			306			241	
Travel Time (s)		6.1			9.3			8.3			6.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	23	1030	41	97	861	9	49	0	81	0	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	1071	0	97	870	0	49	0	81	0	0	10
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6

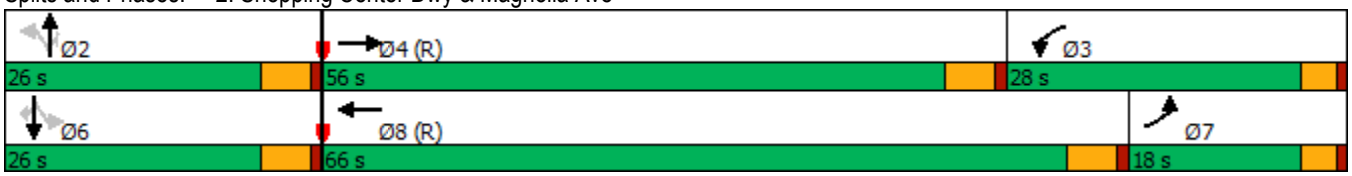


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	23.0		11.0	19.0		12.0	12.0	12.0	23.0	23.0	23.0
Total Split (s)	18.0	56.0		28.0	66.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	16.4%	50.9%		25.5%	60.0%		23.6%	23.6%	23.6%	23.6%	23.6%	23.6%
Maximum Green (s)	14.0	51.0		24.0	61.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0			7.0					7.0	7.0	7.0
Flash Dont Walk (s)		11.0			7.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		5			5					5	5	5
Act Effct Green (s)	7.5	51.0		12.9	63.0		32.1		32.1			32.1
Actuated g/C Ratio	0.07	0.46		0.12	0.57		0.29		0.29			0.29
v/c Ratio	0.19	0.46		0.47	0.43		0.12		0.12			0.01
Control Delay	56.1	8.2		50.9	2.9		32.2		0.3			0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0			0.0
Total Delay	56.1	8.2		50.9	2.9		32.2		0.3			0.0
LOS	E	A		D	A		C		A			A
Approach Delay		9.2			7.7			12.3				
Approach LOS		A			A			B				
Queue Length 50th (ft)	17	72		73	23		25		0			0
Queue Length 95th (ft)	m34	84		129	32		61		0			0
Internal Link Dist (ft)		277			467			226			161	
Turn Bay Length (ft)	225			215								
Base Capacity (vph)	225	2347		386	2022		411		700			696
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	0.10	0.46		0.25	0.43		0.12		0.12			0.01

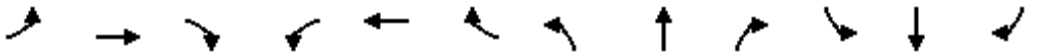
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 59 (54%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 2: Shopping Center Dwy & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1001	46	139	848	13	46	13	83	11	2	23
Future Volume (vph)	45	1001	46	139	848	13	46	13	83	11	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	155		0	140		0	50		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993				0.850		0.870			0.862	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5050	0	1770	3539	1583	1770	1621	0	1770	1606	0
Flt Permitted	0.950			0.950			0.740			0.693		
Satd. Flow (perm)	1770	5050	0	1770	3539	1583	1378	1621	0	1291	1606	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				69		86			24	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		547			546			332			305	
Travel Time (s)		9.3			9.3			9.1			8.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	1032	47	143	874	13	47	13	86	11	2	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	1079	0	143	874	13	47	99	0	11	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		

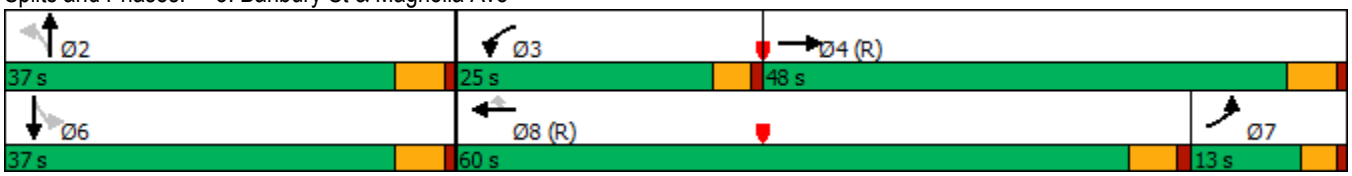


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	36.0	36.0		36.0	36.0	
Total Split (s)	13.0	48.0		25.0	60.0	60.0	37.0	37.0		37.0	37.0	
Total Split (%)	11.8%	43.6%		22.7%	54.5%	54.5%	33.6%	33.6%		33.6%	33.6%	
Maximum Green (s)	9.0	43.0		21.0	55.0	55.0	32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		11.0			11.0	11.0				24.0	24.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	8.6	49.8		14.2	57.6	57.6	32.0	32.0		32.0	32.0	
Actuated g/C Ratio	0.08	0.45		0.13	0.52	0.52	0.29	0.29		0.29	0.29	
v/c Ratio	0.33	0.47		0.63	0.47	0.02	0.12	0.19		0.03	0.05	
Control Delay	36.2	3.8		46.3	23.6	1.1	29.8	9.1		28.4	11.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	36.2	3.8		46.3	23.6	1.1	29.8	9.1		28.4	11.8	
LOS	D	A		D	C	A	C	A		C	B	
Approach Delay		5.2			26.5			15.7			16.7	
Approach LOS		A			C			B			B	
Queue Length 50th (ft)	32	13		103	273	0	24	7		6	1	
Queue Length 95th (ft)	70	165		145	368	m1	54	47		20	22	
Internal Link Dist (ft)		467			466			252			225	
Turn Bay Length (ft)	155			140			50			100		
Base Capacity (vph)	144	2291		337	1853	862	400	532		375	484	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.47		0.42	0.47	0.02	0.12	0.19		0.03	0.05	

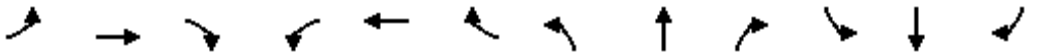
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 3: Banbury St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	668	255	279	558	160	285	742	328	231	655	145
Future Volume (vph)	152	668	255	279	558	160	285	742	328	231	655	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		100	150		0	245		0	170		160
Storage Lanes	2		1	2		0	2		1	2		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850		0.967				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	4917	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	4917	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		72				99			119
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		704			440			651			1448	
Travel Time (s)		12.0			7.5			11.1			24.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	155	682	260	285	569	163	291	757	335	236	668	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	155	682	260	285	732	0	291	757	335	236	668	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	5	3	8		5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	43.0	11.0	11.0	43.0		11.0	40.0	11.0	11.0	43.0	11.0
Total Split (s)	12.0	43.0	12.0	12.0	43.0		12.0	41.0	12.0	14.0	43.0	12.0
Total Split (%)	10.9%	39.1%	10.9%	10.9%	39.1%		10.9%	37.3%	10.9%	12.7%	39.1%	10.9%
Maximum Green (s)	8.0	38.0	8.0	8.0	38.0		8.0	36.0	8.0	10.0	38.0	8.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
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	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		31.0			31.0			28.0			31.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effct Green (s)	9.2	44.6	65.6	8.0	43.3		16.0	29.5	38.5	9.9	23.4	33.6
Actuated g/C Ratio	0.08	0.41	0.60	0.07	0.39		0.15	0.27	0.35	0.09	0.21	0.31
v/c Ratio	0.54	0.33	0.26	1.14	0.37		0.58	0.55	0.54	0.76	0.62	0.26
Control Delay	32.4	9.3	0.9	133.9	6.9		39.9	25.6	10.5	53.0	34.5	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	9.3	0.9	133.9	6.9		39.9	25.6	10.5	53.0	34.5	7.4
LOS	C	A	A	F	A		D	C	B	D	C	A
Approach Delay		10.6			42.5			25.0			34.9	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)	39	115	0	~123	33		101	179	46	86	172	40
Queue Length 95th (ft)	70	190	0	#212	41		#205	106	83	#143	194	58
Internal Link Dist (ft)		624			360			571			1368	
Turn Bay Length (ft)	130		100	150			245			170		160
Base Capacity (vph)	292	2059	987	249	1979		500	1664	618	312	1756	568
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.33	0.26	1.14	0.37		0.58	0.45	0.54	0.76	0.38	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 13 (12%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 27.7		Intersection LOS: C	
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

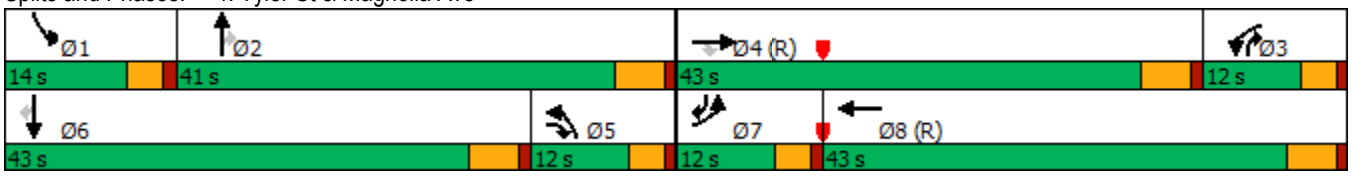
~ Volume exceeds capacity, queue is theoretically infinite.

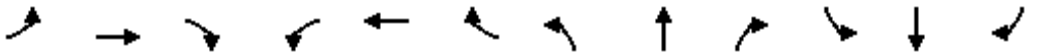
Queue shown is maximum after two cycles.

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

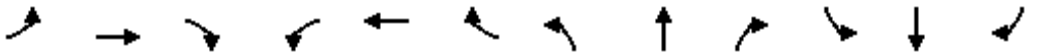
Queue shown is maximum after two cycles.

Splits and Phases: 4: Tyler St & Magnolia Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	924	205	50	833	41	93	8	70	62	16	97
Future Volume (vph)	112	924	205	50	833	41	93	8	70	62	16	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		175	125		0	0		75	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.925	
Flt Protected	0.950			0.950			0.950				0.983	
Satd. Flow (prot)	1770	5085	1583	1770	5050	0	1770	1863	1583	0	1694	0
Flt Permitted	0.950			0.950			0.477				0.880	
Satd. Flow (perm)	1770	5085	1583	1770	5050	0	889	1863	1583	0	1516	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			225		8				109		61	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		440			380			353			241	
Travel Time (s)		7.5			6.5			9.6			6.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	123	1015	225	55	915	45	102	9	77	68	18	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1015	225	55	960	0	102	9	77	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		

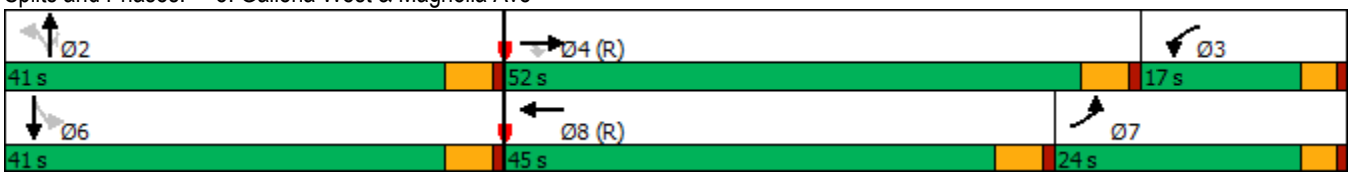


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	30.0	30.0	11.0	23.0		36.0	36.0	36.0	12.0	12.0	
Total Split (s)	24.0	52.0	52.0	17.0	45.0		41.0	41.0	41.0	41.0	41.0	
Total Split (%)	21.8%	47.3%	47.3%	15.5%	40.9%		37.3%	37.3%	37.3%	37.3%	37.3%	
Maximum Green (s)	20.0	47.0	47.0	13.0	40.0		36.0	36.0	36.0	36.0	36.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	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)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		18.0	18.0		11.0		24.0	24.0	24.0			
Pedestrian Calls (#/hr)		5	5		5		5	5	5			
Act Effct Green (s)	14.9	72.0	72.0	9.1	64.0		17.1	17.1	17.1		17.1	
Actuated g/C Ratio	0.14	0.65	0.65	0.08	0.58		0.16	0.16	0.16		0.16	
v/c Ratio	0.51	0.30	0.20	0.38	0.33		0.74	0.03	0.23		0.67	
Control Delay	48.8	10.2	3.0	49.4	0.9		71.6	33.9	4.0		39.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	48.8	10.2	3.0	49.4	0.9		71.6	33.9	4.0		39.7	
LOS	D	B	A	D	A		E	C	A		D	
Approach Delay		12.5			3.5			42.1			39.7	
Approach LOS		B			A			D			D	
Queue Length 50th (ft)	76	99	8	41	4		71	6	0		90	
Queue Length 95th (ft)	m122	133	m16	86	6		112	17	18		142	
Internal Link Dist (ft)		360			300			273			161	
Turn Bay Length (ft)	80		175	125					75			
Base Capacity (vph)	321	3328	1114	209	2941		290	609	591		537	
Starvation Cap Reductn	0	0	0	0	122		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.38	0.30	0.20	0.26	0.34		0.35	0.01	0.13		0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 10 (9%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 5: Galleria West & Magnolia Ave

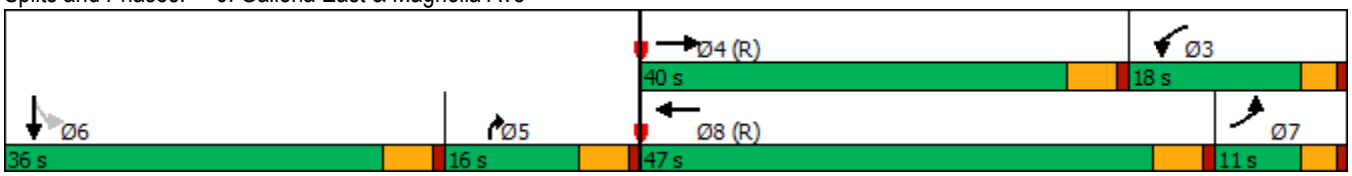


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	996	41	104	922	22	0	0	122	20	0	35
Future Volume (vph)	31	996	41	104	922	22	0	0	122	20	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		165	130		0	0		0	0		0
Storage Lanes	1		1	1		0	0		2	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850		0.997				0.850		0.914	
Flt Protected	0.950			0.950							0.982	
Satd. Flow (prot)	1770	5085	1583	1770	5070	0	0	0	2787	0	1672	0
Flt Permitted	0.950			0.950							0.982	
Satd. Flow (perm)	1770	5085	1583	1770	5070	0	0	0	2787	0	1672	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			208		4						159	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		380			506			335			173	
Travel Time (s)		6.5			8.6			9.1			4.7	
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
Adj. Flow (vph)	33	1048	43	109	971	23	0	0	128	21	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1048	43	109	994	0	0	0	128	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2				1	1	2	
Detector Template	Left	Thru	Right	Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100				20	20	100	
Trailing Detector (ft)	0	0	0	0	0				0	0	0	
Detector 1 Position(ft)	0	0	0	0	0				0	0	0	
Detector 1 Size(ft)	20	6	20	20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot	NA	Free	Prot	NA				Prot	Perm	NA	
Protected Phases	7	4		3	8				5		6	
Permitted Phases			Free							6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8				5	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	19.0				12.0	36.0	36.0	
Total Split (s)	11.0	40.0		18.0	47.0				16.0	36.0	36.0	
Total Split (%)	10.0%	36.4%		16.4%	42.7%				14.5%	32.7%	32.7%	
Maximum Green (s)	7.0	35.0		14.0	42.0				11.0	31.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0				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	
Total Lost Time (s)	4.0	5.0		4.0	5.0				5.0		5.0	
Lead/Lag	Lag	Lead		Lag	Lead				Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max				None	Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		11.0			7.0					24.0	24.0	
Pedestrian Calls (#/hr)		5			5					5	5	
Act Effct Green (s)	7.0	36.3	110.0	11.9	45.6				9.7		33.1	
Actuated g/C Ratio	0.06	0.33	1.00	0.11	0.41				0.09		0.30	
v/c Ratio	0.29	0.63	0.03	0.57	0.47				0.52		0.09	
Control Delay	45.7	16.0	0.0	46.7	7.6				55.4		0.3	
Queue Delay	0.0	0.3	0.0	0.0	0.0				0.0		0.0	
Total Delay	45.7	16.3	0.0	46.7	7.6				55.4		0.3	
LOS	D	B	A	D	A				E		A	
Approach Delay		16.5			11.5			55.4			0.3	
Approach LOS		B			B			E			A	
Queue Length 50th (ft)	25	158	0	82	40				49		0	
Queue Length 95th (ft)	58	71	0	142	47				83		0	
Internal Link Dist (ft)		300			426			255			93	
Turn Bay Length (ft)	100		165	130								
Base Capacity (vph)	112	1675	1583	225	2103				278		614	
Starvation Cap Reductn	0	171	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	0.29	0.70	0.03	0.48	0.47				0.46		0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 1 (1%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 15.9		Intersection LOS: B	
Intersection Capacity Utilization 43.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Galleria East & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1023	33	173	853	427	55	80	123	549	117	63
Future Volume (vph)	66	1023	33	173	853	427	55	80	123	549	117	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		110	0		0	100		0
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	0.91	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.995				0.850		0.909			0.947	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5060	0	3433	5085	1583	1770	1693	0	3433	1764	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5060	0	3433	5085	1583	1770	1693	0	3433	1764	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				345		59			26	
Link Speed (mph)		40			45			40			40	
Link Distance (ft)		506			714			431			1963	
Travel Time (s)		8.6			10.8			7.3			33.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	70	1088	35	184	907	454	59	85	131	584	124	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1123	0	184	907	454	59	216	0	584	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	33.0	33.0	12.0	12.0		40.0	40.0	
Total Split (s)	11.0	36.0		13.0	38.0	38.0	21.0	21.0		40.0	40.0	
Total Split (%)	10.0%	32.7%		11.8%	34.5%	34.5%	19.1%	19.1%		36.4%	36.4%	
Maximum Green (s)	7.0	31.0		9.0	33.0	33.0	16.0	16.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		None	None	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		14.0			21.0	21.0				28.0	28.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	7.0	38.8		10.1	44.1	44.1	16.0	16.0		26.1	26.1	
Actuated g/C Ratio	0.06	0.35		0.09	0.40	0.40	0.15	0.15		0.24	0.24	
v/c Ratio	0.32	0.63		0.58	0.44	0.54	0.23	0.73		0.72	0.44	
Control Delay	23.8	4.4		55.7	26.6	10.0	44.2	47.9		24.1	14.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	23.8	4.4		55.7	26.6	10.0	44.2	47.9		24.1	14.8	
LOS	C	A		E	C	A	D	D		C	B	
Approach Delay		5.5			25.2			47.1			21.8	
Approach LOS		A			C			D			C	
Queue Length 50th (ft)	26	36		64	173	50	37	107		105	33	
Queue Length 95th (ft)	m34	102		#104	245	170	77	#213		111	57	
Internal Link Dist (ft)		426			634			351			1883	
Turn Bay Length (ft)	125			150		110				100		
Base Capacity (vph)	218	1786		321	2039	841	257	296		1092	579	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.63		0.57	0.44	0.54	0.23	0.73		0.53	0.33	

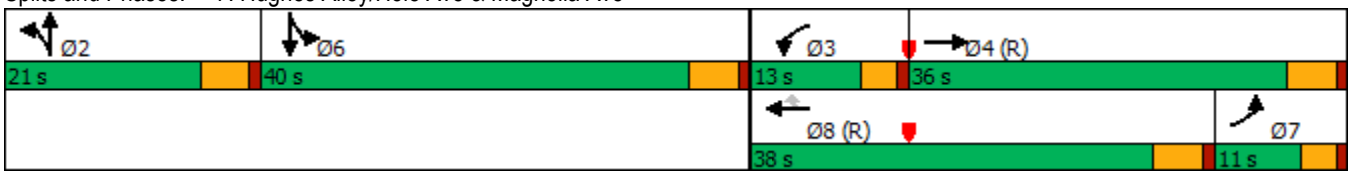
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			

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

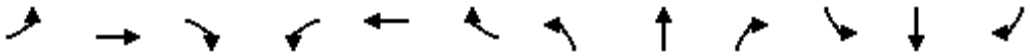
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Hughes Alley/Hole Ave & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	370	247	158	419	225	308	563	103	145	566	67
Future Volume (vph)	91	370	247	158	419	225	308	563	103	145	566	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	130		130	130		0	100		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	0.91
Frt			0.850			0.850			0.850		0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5004	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5004	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			263			146			159		18	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		702			1963			1448			757	
Travel Time (s)		12.0			33.5			24.7			12.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	97	394	263	168	446	239	328	599	110	154	602	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	394	263	168	446	239	328	599	110	154	673	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			

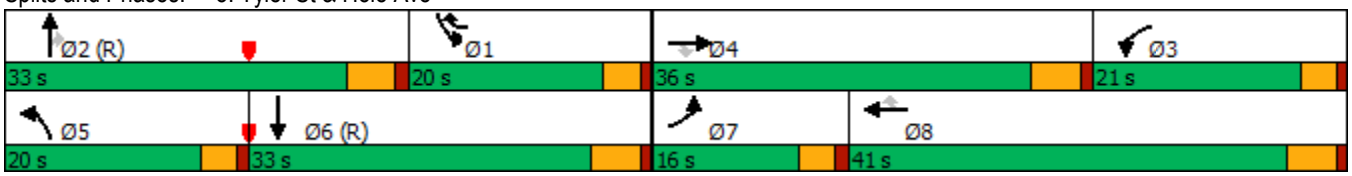


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	36.0	36.0	11.0	33.0	11.0	11.0	33.0	33.0	11.0	33.0	
Total Split (s)	16.0	36.0	36.0	21.0	41.0	20.0	20.0	33.0	33.0	20.0	33.0	
Total Split (%)	14.5%	32.7%	32.7%	19.1%	37.3%	18.2%	18.2%	30.0%	30.0%	18.2%	30.0%	
Maximum Green (s)	12.0	31.0	31.0	17.0	36.0	16.0	16.0	28.0	28.0	16.0	28.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
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	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		24.0	24.0		21.0			21.0	21.0		21.0	
Pedestrian Calls (#/hr)		5	5		5			5	5		5	
Act Effct Green (s)	10.4	20.1	20.1	14.8	24.5	41.5	14.9	41.2	41.2	16.0	42.3	
Actuated g/C Ratio	0.09	0.18	0.18	0.13	0.22	0.38	0.14	0.37	0.37	0.15	0.38	
v/c Ratio	0.58	0.61	0.52	0.71	0.57	0.35	0.71	0.45	0.16	0.60	0.35	
Control Delay	61.7	44.7	8.0	56.6	35.9	4.0	45.3	14.9	1.9	54.6	26.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.7	44.7	8.0	56.6	35.9	4.0	45.3	14.9	1.9	54.6	26.1	
LOS	E	D	A	E	D	A	D	B	A	D	C	
Approach Delay		34.1			31.0			23.1			31.4	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	66	138	0	112	135	18	46	35	0	103	118	
Queue Length 95th (ft)	121	163	61	m187	171	m32	141	241	24	173	186	
Internal Link Dist (ft)		622			1883			1368			677	
Turn Bay Length (ft)	100		100	130		130	130			100		
Base Capacity (vph)	193	997	635	276	1158	687	507	1324	691	257	1933	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.50	0.40	0.41	0.61	0.39	0.35	0.65	0.45	0.16	0.60	0.35	

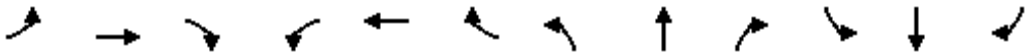
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 19 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 29.4		Intersection LOS: C	
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 8: Tyler St & Hole Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	10	27	127	6	38	93	1240	99	69	1083	28
Future Volume (vph)	42	10	27	127	6	38	93	1240	99	69	1083	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		115	215		0	170		0
Storage Lanes	0		0	1		1	1		0	2		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.91	0.91
Frt		0.953				0.850		0.989			0.996	
Flt Protected		0.974		0.950			0.950			0.950		
Satd. Flow (prot)	0	1729	0	1770	1863	1583	1770	6337	0	3433	5065	0
Flt Permitted		0.847		0.716			0.950			0.950		
Satd. Flow (perm)	0	1504	0	1334	1863	1583	1770	6337	0	3433	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				109		20			4	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		221			241			548			651	
Travel Time (s)		6.0			6.6			9.3			11.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	43	10	28	131	6	39	96	1278	102	71	1116	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	131	6	39	96	1380	0	71	1145	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						

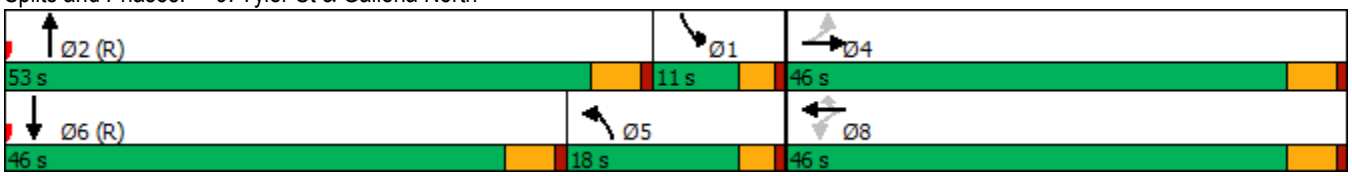


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	40.0	40.0		43.0	43.0	43.0	11.0	30.0		11.0	23.0	
Total Split (s)	46.0	46.0		46.0	46.0	46.0	18.0	53.0		11.0	46.0	
Total Split (%)	41.8%	41.8%		41.8%	41.8%	41.8%	16.4%	48.2%		10.0%	41.8%	
Maximum Green (s)	41.0	41.0		41.0	41.0	41.0	14.0	48.0		7.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
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	
Total Lost Time (s)		5.0		5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag							Lag	Lead		Lag	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	28.0	28.0		31.0	31.0	31.0		18.0			11.0	
Pedestrian Calls (#/hr)	5	5		5	5	5		5			5	
Act Effct Green (s)		19.1		19.1	19.1	19.1	12.6	72.1		7.0	66.5	
Actuated g/C Ratio		0.17		0.17	0.17	0.17	0.11	0.66		0.06	0.60	
v/c Ratio		0.29		0.57	0.02	0.11	0.48	0.33		0.33	0.37	
Control Delay		26.1		48.9	30.5	0.6	43.9	1.4		47.0	6.7	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		26.1		48.9	30.5	0.6	43.9	1.4		47.0	6.7	
LOS		C		D	C	A	D	A		D	A	
Approach Delay		26.1			37.5			4.2			9.1	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)		34		89	4	0	71	11		25	59	
Queue Length 95th (ft)		60		118	12	0	m125	11		m43	m75	
Internal Link Dist (ft)		141			161			468			571	
Turn Bay Length (ft)						115	215			170		
Base Capacity (vph)		578		497	694	658	225	4160		218	3063	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.14		0.26	0.01	0.06	0.43	0.33		0.33	0.37	

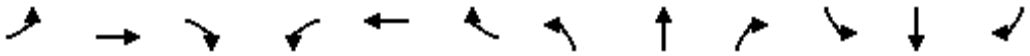
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 58 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 9: Tyler St & Galleria North



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	75	226	273	45	66	301	1164	151	76	1053	155
Future Volume (vph)	216	75	226	273	45	66	301	1164	151	76	1053	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		50	240		0	155		0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.86	0.86	1.00	0.86	0.86
Frt			0.850			0.850		0.983			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	3433	6299	0	1770	6286	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	3433	6299	0	1770	6286	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235			149		29			31	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		267			252			595			487	
Travel Time (s)		7.3			6.9			10.1			8.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	225	78	235	284	47	69	314	1213	157	79	1097	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	78	235	284	47	69	314	1370	0	79	1258	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						



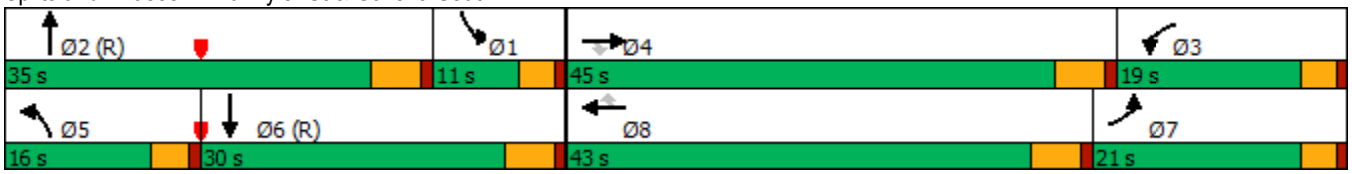
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	12.0	12.0	11.0	43.0	43.0	11.0	26.0		11.0	30.0	
Total Split (s)	21.0	45.0	45.0	19.0	43.0	43.0	16.0	35.0		11.0	30.0	
Total Split (%)	19.1%	40.9%	40.9%	17.3%	39.1%	39.1%	14.5%	31.8%		10.0%	27.3%	
Maximum Green (s)	17.0	40.0	40.0	15.0	38.0	38.0	12.0	30.0		7.0	25.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	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	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)					7.0	7.0		7.0			7.0	
Flash Dont Walk (s)					31.0	31.0		14.0			18.0	
Pedestrian Calls (#/hr)					5	5		5			5	
Act Effct Green (s)	20.0	10.5	10.5	21.0	13.9	13.9	14.3	55.7		7.0	46.2	
Actuated g/C Ratio	0.18	0.10	0.10	0.19	0.13	0.13	0.13	0.51		0.06	0.42	
v/c Ratio	0.70	0.44	0.65	0.43	0.20	0.21	0.70	0.43		0.71	0.47	
Control Delay	55.5	53.8	14.6	39.6	40.5	1.4	55.3	20.3		57.6	7.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	55.5	53.8	14.6	39.6	40.5	1.4	55.3	20.3		57.6	7.5	
LOS	E	D	B	D	D	A	E	C		E	A	
Approach Delay		37.4			33.2			26.8			10.5	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	150	53	0	94	32	0	108	163		49	38	
Queue Length 95th (ft)	#283	97	71	104	49	0	#186	300		#129	122	
Internal Link Dist (ft)		187			172			515			407	
Turn Bay Length (ft)				150		50	240			155		
Base Capacity (vph)	321	677	725	683	643	644	447	3204		112	2658	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.70	0.12	0.32	0.42	0.07	0.11	0.70	0.43		0.71	0.47	

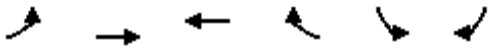
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 23.4		Intersection LOS: C	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

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

Queue shown is maximum after two cycles.

Splits and Phases: 10: Tyler St & Galleria South





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↱
Traffic Volume (vph)	0	1095	982	17	0	18
Future Volume (vph)	0	1095	982	17	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Frt			0.997			0.865
Flt Protected						
Satd. Flow (prot)	0	5085	5070	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	5085	5070	0	0	1611
Link Speed (mph)		40	40		25	
Link Distance (ft)		546	704		334	
Travel Time (s)		9.3	12.0		9.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1129	1012	18	0	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1129	1030	0	0	19
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			

APPENDIX B-II

ALTERNATIVE 1 – HALF SIGNAL
EXISTING PLUS PROJECT TRAFFIC CONDITIONS

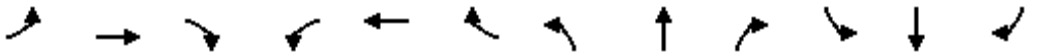
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	478	137	82	439	48	36	44	40	77	106	197
Future Volume (veh/h)	100	478	137	82	439	48	36	44	40	77	106	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	106	509	146	87	467	51	38	47	43	82	113	210
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	1017	290	343	1614	176	78	164	150	143	388	346
Arrive On Green	0.08	0.37	0.37	0.19	0.50	0.50	0.04	0.18	0.18	0.08	0.22	0.22
Sat Flow, veh/h	1781	2729	779	1781	3232	352	1781	899	823	1781	1777	1585
Grp Volume(v), veh/h	106	331	324	87	256	262	38	0	90	82	113	210
Grp Sat Flow(s),veh/h/ln	1781	1777	1730	1781	1777	1807	1781	0	1722	1781	1777	1585
Q Serve(g_s), s	6.4	15.8	15.9	4.6	9.3	9.3	2.3	0.0	5.0	4.9	5.8	13.1
Cycle Q Clear(g_c), s	6.4	15.8	15.9	4.6	9.3	9.3	2.3	0.0	5.0	4.9	5.8	13.1
Prop In Lane	1.00		0.45	1.00		0.19	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	134	662	645	343	887	902	78	0	313	143	388	346
V/C Ratio(X)	0.79	0.50	0.50	0.25	0.29	0.29	0.49	0.00	0.29	0.57	0.29	0.61
Avail Cap(c_a), veh/h	308	662	645	343	887	902	162	0	313	227	388	346
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	26.6	26.6	37.7	16.1	16.1	51.4	0.0	38.8	48.8	35.9	38.8
Incr Delay (d2), s/veh	10.0	2.7	2.8	0.4	0.8	0.8	4.7	0.0	2.3	3.6	1.9	7.7
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	3.2	6.9	6.8	2.0	3.8	3.9	1.1	0.0	2.3	2.3	2.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	29.3	29.4	38.1	16.9	16.9	56.1	0.0	41.2	52.4	37.8	46.5
LnGrp LOS	E	C	C	D	B	B	E	A	D	D	D	D
Approach Vol, veh/h		761			605			128			405	
Approach Delay, s/veh		33.6			20.0			45.6			45.3	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	25.0	26.2	46.0	8.8	29.0	12.3	59.9
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	14.0	20.0	17.0	* 41	10.0	24.0	19.0	39.0
Max Q Clear Time (g_c+I1), s	6.9	7.0	6.6	17.9	4.3	15.1	8.4	11.3
Green Ext Time (p_c), s	0.1	0.3	0.1	3.9	0.0	1.2	0.2	3.0

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	594	23	71	552	4	7	0	12	0	0	1
Future Volume (veh/h)	15	594	23	71	552	4	7	0	12	0	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	653	25	78	607	4	8	0	13	0	0	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	2202	84	437	1974	13	336	357	303	65	357	303
Arrive On Green	0.14	0.44	0.44	0.49	1.00	1.00	0.19	0.00	0.19	0.00	0.00	0.19
Sat Flow, veh/h	1781	5047	193	1781	3619	24	1416	1870	1585	1401	1870	1585
Grp Volume(v), veh/h	16	440	238	78	298	313	8	0	13	0	0	1
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1777	1866	1416	1870	1585	1401	1870	1585
Q Serve(g_s), s	0.9	9.2	9.3	2.7	0.0	0.0	0.5	0.0	0.7	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.9	9.2	9.3	2.7	0.0	0.0	0.5	0.0	0.7	0.0	0.0	0.1
Prop In Lane	1.00		0.10	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1485	801	437	969	1018	336	357	303	65	357	303
V/C Ratio(X)	0.07	0.30	0.30	0.18	0.31	0.31	0.02	0.00	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	243	1485	801	437	969	1018	336	357	303	65	357	303
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	20.1	20.1	21.8	0.0	0.0	36.2	0.0	36.3	0.0	0.0	36.0
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.2	0.8	0.7	0.1	0.0	0.3	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	0.4	3.6	4.0	1.1	0.2	0.2	0.2	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	20.6	21.0	22.0	0.8	0.7	36.3	0.0	36.6	0.0	0.0	36.0
LnGrp LOS	D	C	C	C	A	A	D	A	D	A	A	D
Approach Vol, veh/h		694			689			21			1	
Approach Delay, s/veh		21.2			3.2			36.5			36.0	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	31.0	53.0		26.0	19.0	65.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		21.0	27.0	48.0		21.0	15.0	60.0				
Max Q Clear Time (g_c+I1), s		2.7	4.7	11.3		2.1	2.9	2.0				
Green Ext Time (p_c), s		0.0	0.2	4.5		0.0	0.0	3.8				

Intersection Summary												
HCM 6th Ctrl Delay			12.6									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	567	37	97	560	0	39	1	83	0	0	2
Future Volume (veh/h)	27	567	37	97	560	0	39	1	83	0	0	2
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	644	42	110	636	0	44	1	94	0	0	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	2290	148	139	1551	692	527	5	514	65	0	519
Arrive On Green	0.20	0.93	0.93	0.03	0.14	0.00	0.33	0.33	0.33	0.00	0.00	0.33
Sat Flow, veh/h	1781	4900	318	1781	3554	1585	1415	17	1571	1301	0	1585
Grp Volume(v), veh/h	31	446	240	110	636	0	44	0	95	0	0	2
Grp Sat Flow(s),veh/h/ln	1781	1702	1813	1781	1777	1585	1415	0	1588	1301	0	1585
Q Serve(g_s), s	1.6	1.3	1.3	6.8	17.9	0.0	2.4	0.0	4.7	0.0	0.0	0.1
Cycle Q Clear(g_c), s	1.6	1.3	1.3	6.8	17.9	0.0	2.5	0.0	4.7	0.0	0.0	0.1
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	178	1591	847	139	1551	692	527	0	520	65	0	519
V/C Ratio(X)	0.17	0.28	0.28	0.79	0.41	0.00	0.08	0.00	0.18	0.00	0.00	0.00
Avail Cap(c_a), veh/h	194	1591	847	275	1551	692	527	0	520	65	0	519
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.99	0.99	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	2.0	2.0	52.7	34.2	0.0	25.8	0.0	26.5	0.0	0.0	24.9
Incr Delay (d2), s/veh	0.4	0.4	0.8	9.5	0.8	0.0	0.3	0.0	0.8	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	0.7	0.5	0.6	3.5	8.6	0.0	0.9	0.0	1.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	2.4	2.8	62.2	35.0	0.0	26.1	0.0	27.2	0.0	0.0	24.9
LnGrp LOS	D	A	A	E	C	A	C	A	C	A	A	C
Approach Vol, veh/h		717			746			139			2	
Approach Delay, s/veh		4.2			39.0			26.9			24.9	
Approach LOS		A			D			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	41.0	12.6	56.4	41.0	16.0	53.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	5.0	* 5
Max Green Setting (Gmax), s	36.0	17.0	43.0	36.0	12.0	* 48
Max Q Clear Time (g_c+I1), s	6.7	8.8	3.3	2.1	3.6	19.9
Green Ext Time (p_c), s	0.7	0.1	4.6	0.0	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	22.4
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	440	120	116	320	37	220	621	208	30	497	121
Future Volume (veh/h)	130	440	120	116	320	37	220	621	208	30	497	121
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	463	126	122	337	39	232	654	219	32	523	127
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	1764	677	838	2486	282	283	973	686	137	805	349
Arrive On Green	0.06	0.35	0.35	0.08	0.18	0.18	0.03	0.06	0.06	0.04	0.16	0.16
Sat Flow, veh/h	3456	5106	1585	3456	4652	527	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	137	463	126	122	245	131	232	654	219	32	523	127
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1775	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	4.3	7.2	1.9	3.6	6.7	6.9	7.3	13.8	0.0	1.0	10.6	7.5
Cycle Q Clear(g_c), s	4.3	7.2	1.9	3.6	6.7	6.9	7.3	13.8	0.0	1.0	10.6	7.5
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	1764	677	838	1819	949	283	973	686	137	805	349
V/C Ratio(X)	0.63	0.26	0.19	0.15	0.13	0.14	0.82	0.67	0.32	0.23	0.65	0.36
Avail Cap(c_a), veh/h	220	1764	677	838	1819	949	283	1857	961	220	1764	647
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	0.99	0.99	0.99	0.97	0.97	0.97
Uniform Delay (d), s/veh	50.3	25.9	7.4	40.0	23.8	23.9	52.7	48.2	24.4	51.2	43.5	36.4
Incr Delay (d2), s/veh	5.6	0.4	0.6	0.1	0.2	0.3	17.1	0.8	0.3	0.8	0.9	0.6
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	2.0	2.9	0.9	1.5	2.7	3.0	3.9	6.3	4.3	0.4	4.4	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.9	26.3	8.0	40.1	24.0	24.2	69.8	49.0	24.6	52.0	44.3	37.0
LnGrp LOS	E	C	A	D	C	C	E	D	C	D	D	D
Approach Vol, veh/h		726			498			1105			682	
Approach Delay, s/veh		28.7			28.0			48.5			43.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	26.0	31.7	43.0	13.0	22.3	10.9	63.8
Change Period (Y+Rc), s	5.0	* 5	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	* 40	7.0	* 38	9.0	38.0	7.0	38.0
Max Q Clear Time (g_c+I1), s	3.0	15.8	5.6	9.2	9.3	12.6	6.3	8.9
Green Ext Time (p_c), s	0.0	5.2	0.0	3.5	0.0	3.9	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	39.2
HCM 6th LOS	D

Notes

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

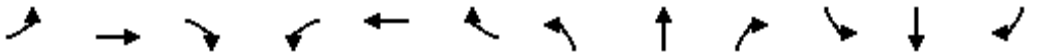
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	604	37	21	507	13	1	1	9	7	0	5
Future Volume (veh/h)	25	604	37	21	507	13	1	1	9	7	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	623	38	22	523	13	1	1	9	7	0	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	2275	706	688	4129	102	113	60	51	75	5	20
Arrive On Green	0.07	0.89	0.89	0.77	1.00	1.00	0.03	0.03	0.03	0.03	0.00	0.03
Sat Flow, veh/h	1781	5106	1585	1781	5125	127	1411	1870	1585	726	158	632
Grp Volume(v), veh/h	26	623	38	22	347	189	1	1	9	12	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1848	1411	1870	1585	1516	0	0
Q Serve(g_s), s	1.5	1.9	0.3	0.3	0.0	0.0	0.0	0.1	0.6	0.2	0.0	0.0
Cycle Q Clear(g_c), s	1.5	1.9	0.3	0.3	0.0	0.0	0.1	0.1	0.6	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.58		0.42
Lane Grp Cap(c), veh/h	62	2275	706	688	2743	1489	113	60	51	101	0	0
V/C Ratio(X)	0.42	0.27	0.05	0.03	0.13	0.13	0.01	0.02	0.18	0.12	0.00	0.00
Avail Cap(c_a), veh/h	259	2275	706	688	2743	1489	466	527	447	469	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.1	3.4	3.3	7.7	0.0	0.0	51.6	51.6	51.8	51.9	0.0	0.0
Incr Delay (d2), s/veh	4.3	0.3	0.1	0.0	0.1	0.2	0.0	0.1	1.6	0.5	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	0.7	0.6	0.1	0.1	0.0	0.1	0.0	0.0	0.3	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	3.7	3.5	7.7	0.1	0.2	51.6	51.7	53.5	52.4	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	D	D	D	A	A
Approach Vol, veh/h		687			558			11			12	
Approach Delay, s/veh		5.6			0.4			53.1			52.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.5	47.5	54.0	8.5	7.8	93.6
Change Period (Y+Rc), s	5.0	5.0	* 5	5.0	4.0	5.0
Max Green Setting (Gmax), s	31.0	16.0	* 49	31.0	16.0	49.0
Max Q Clear Time (g_c+I1), s	2.6	2.3	3.9	2.8	3.5	2.0
Green Ext Time (p_c), s	0.0	0.0	4.7	0.0	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	4.2
HCM 6th LOS	A

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	615	3	17	535	16	0	0	8	3	0	4
Future Volume (veh/h)	6	615	3	17	535	16	0	0	8	3	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		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	1870	1870	1870	1870	1870	1870	0	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	6	628	0	17	546	16	0	0	8	3	0	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	2	2	2	2
Cap, veh/h	405	1718		453	1854	54	0	0	0	0	0	0
Arrive On Green	0.45	0.67	0.00	0.51	0.73	0.73	0.00	0.00	0.00	0.28	0.00	0.28
Sat Flow, veh/h	1781	5106	1585	1781	5099	149		0		0	0	0
Grp Volume(v), veh/h	6	628	0	17	364	198		0.0		7	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1844				0	0	0
Q Serve(g_s), s	0.2	5.9	0.0	0.5	4.1	4.1				0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	5.9	0.0	0.5	4.1	4.1				0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08				0.43		0.57
Lane Grp Cap(c), veh/h	405	1718		453	1238	670				0	0	0
V/C Ratio(X)	0.01	0.37		0.04	0.29	0.30				0.00	0.00	0.00
Avail Cap(c_a), veh/h	405	1718		453	1238	670				0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	0.99	0.99	0.99				1.00	0.00	0.00
Uniform Delay (d), s/veh	23.2	12.9	0.0	20.3	10.1	10.1				28.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.6	1.1				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
%ile BackOfQ(50%),veh/ln	0.1	2.0	0.0	0.2	1.4	1.6				0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	13.5	0.0	20.3	10.7	11.2				28.4	0.0	0.0
LnGrp LOS	C	B		C	B	B				C	A	A
Approach Vol, veh/h		634	A		579						7	
Approach Delay, s/veh		13.6			11.2						28.4	
Approach LOS		B			B						C	

Timer - Assigned Phs		3	4		6	7	8					
Phs Duration (G+Y+Rc), s		32.0	42.0		36.0	29.0	45.0					
Change Period (Y+Rc), s		4.0	5.0		5.0	4.0	5.0					
Max Green Setting (Gmax), s		13.0	37.0		31.0	10.0	40.0					
Max Q Clear Time (g_c+I1), s		2.5	7.9		2.0	2.2	6.1					
Green Ext Time (p_c), s		0.0	4.3		0.0	0.0	3.6					

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	634	9	24	483	281	7	13	13	233	11	11
Future Volume (veh/h)	29	634	9	24	483	281	7	13	13	233	11	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	674	10	26	514	299	7	14	14	248	12	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1012	3176	47	121	1764	548	146	70	70	338	84	84
Arrive On Green	0.59	1.00	1.00	0.03	0.35	0.35	0.08	0.08	0.08	0.03	0.03	0.03
Sat Flow, veh/h	3456	5184	77	3456	5106	1585	1781	858	858	3456	858	858
Grp Volume(v), veh/h	31	442	242	26	514	299	7	0	28	248	0	24
Grp Sat Flow(s),veh/h/ln	1728	1702	1857	1728	1702	1585	1781	0	1716	1728	0	1716
Q Serve(g_s), s	0.4	0.0	0.0	0.8	8.1	16.7	0.4	0.0	1.7	7.8	0.0	1.5
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.8	8.1	16.7	0.4	0.0	1.7	7.8	0.0	1.5
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.50	1.00		0.50
Lane Grp Cap(c), veh/h	1012	2085	1137	121	1764	548	146	0	140	338	0	168
V/C Ratio(X)	0.03	0.21	0.21	0.22	0.29	0.55	0.05	0.00	0.20	0.73	0.00	0.14
Avail Cap(c_a), veh/h	1012	2085	1137	220	1764	548	146	0	140	1162	0	577
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94
Uniform Delay (d), s/veh	16.2	0.0	0.0	51.6	26.2	29.0	46.6	0.0	47.1	51.8	0.0	48.7
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.9	0.4	3.9	0.6	0.0	3.2	2.9	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.1	0.4	3.2	6.6	0.2	0.0	0.8	3.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	0.2	0.4	52.5	26.6	32.9	47.2	0.0	50.3	54.7	0.0	49.1
LnGrp LOS	B	A	A	D	C	C	D	A	D	D	A	D
Approach Vol, veh/h		715			839			35			272	
Approach Delay, s/veh		1.0			29.7			49.7			54.2	
Approach LOS		A			C			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	14.0	7.8	72.4	15.8	37.2	43.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	5.0	* 5
Max Green Setting (Gmax), s	9.0	7.0	38.0	37.0	7.0	* 38
Max Q Clear Time (g_c+I1), s	3.7	2.8	2.0	9.8	2.4	18.7
Green Ext Time (p_c), s	0.0	0.0	4.5	1.0	0.0	4.1

Intersection Summary	
HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	247	194	25	142	74	185	430	174	67	440	31
Future Volume (veh/h)	33	247	194	25	142	74	185	430	174	67	440	31
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	257	202	26	148	77	193	448	0	70	458	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	383	171	62	361	250	1266	2266		100	1625	
Arrive On Green	0.04	0.11	0.11	0.01	0.03	0.03	0.37	0.64	0.00	0.06	0.32	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	1781	5274	0
Grp Volume(v), veh/h	34	257	202	26	148	77	193	448	0	70	458	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1781	1702	0
Q Serve(g_s), s	2.1	7.7	5.8	1.6	4.5	4.9	4.1	5.8	0.0	4.2	7.4	0.0
Cycle Q Clear(g_c), s	2.1	7.7	5.8	1.6	4.5	4.9	4.1	5.8	0.0	4.2	7.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	73	383	171	62	361	250	1266	2266		100	1625	
V/C Ratio(X)	0.46	0.67	1.18	0.42	0.41	0.31	0.15	0.20		0.70	0.28	
Avail Cap(c_a), veh/h	146	1131	504	146	1131	593	1266	2266		194	1625	
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	0.97	0.97	0.97	0.84	0.84	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.6	47.2	11.7	53.3	49.9	44.2	23.4	8.3	0.0	51.0	28.1	0.0
Incr Delay (d2), s/veh	4.5	2.0	94.8	4.3	0.7	0.7	0.0	0.2	0.0	8.5	0.4	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	1.0	3.4	8.8	0.8	2.0	2.0	1.6	2.0	0.0	2.1	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.1	49.2	106.5	57.6	50.7	44.9	23.4	8.4	0.0	59.5	28.5	0.0
LnGrp LOS	E	D	F	E	D	D	C	A		E	C	
Approach Vol, veh/h		493			251			641	A		528	A
Approach Delay, s/veh		73.2			49.6			12.9			32.6	
Approach LOS		E			D			B			C	

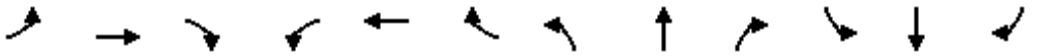
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	75.1	7.8	16.9	45.3	40.0	8.5	16.2
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	12.0	36.0	9.0	35.0	13.0	* 35	9.0	35.0
Max Q Clear Time (g_c+I1), s	6.2	7.8	3.6	9.7	6.1	9.4	4.1	6.9
Green Ext Time (p_c), s	0.1	2.9	0.0	2.2	0.3	3.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	38.7
HCM 6th LOS	D

Notes

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

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



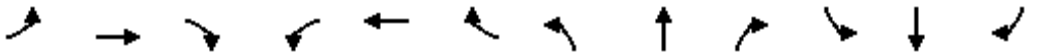
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	5	24	3	8	46	1035	48	10	734	3
Future Volume (veh/h)	5	2	5	24	3	8	46	1035	48	10	734	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	2	5	25	3	8	47	1067	49	10	757	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	27	33	137	92	78	771	5127	235	58	2004	8
Arrive On Green	0.05	0.05	0.05	0.05	0.05	0.05	0.43	0.81	0.81	0.01	0.26	0.26
Sat Flow, veh/h	387	558	675	1409	1870	1585	1781	6353	291	3456	5250	21
Grp Volume(v), veh/h	12	0	0	25	3	8	47	809	307	10	491	269
Grp Sat Flow(s),veh/h/ln	1620	0	0	1409	1870	1585	1781	1609	1818	1728	1702	1867
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.2	0.5	1.7	4.3	4.3	0.3	13.1	13.1
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.7	0.2	0.5	1.7	4.3	4.3	0.3	13.1	13.1
Prop In Lane	0.42		0.42	1.00		1.00	1.00		0.16	1.00		0.01
Lane Grp Cap(c), veh/h	126	0	0	137	92	78	771	3894	1467	58	1300	713
V/C Ratio(X)	0.10	0.00	0.00	0.18	0.03	0.10	0.06	0.21	0.21	0.17	0.38	0.38
Avail Cap(c_a), veh/h	597	0	0	567	663	562	771	3894	1467	346	1300	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	50.1	0.0	0.0	50.5	49.8	50.0	18.2	2.5	2.5	53.6	30.2	30.2
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.6	0.1	0.6	0.0	0.1	0.3	1.2	0.7	1.3
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	0.3	0.0	0.0	0.7	0.1	0.2	0.7	0.9	1.1	0.1	5.7	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	0.0	51.1	50.0	50.6	18.2	2.6	2.8	54.9	30.9	31.5
LnGrp LOS	D	A	A	D	D	D	B	A	A	D	C	C
Approach Vol, veh/h		12			36			1163			770	
Approach Delay, s/veh		50.4			50.9			3.3			31.4	
Approach LOS		D			D			A			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	93.8		10.4	52.6	47.0		10.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	5.0	* 5		5.0				
Max Green Setting (Gmax), s	11.0	46.0		39.0	15.0	* 42		39.0				
Max Q Clear Time (g_c+I1), s	2.3	6.3		2.7	3.7	15.1		3.7				
Green Ext Time (p_c), s	0.0	8.7		0.0	0.0	4.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		15.4	
HCM 6th LOS		B	

Notes

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



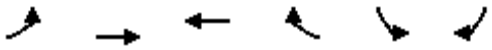
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	3	20	35	4	6	426	1130	20	15	685	38
Future Volume (veh/h)	33	3	20	35	4	6	426	1130	20	15	685	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	3	21	36	4	0	439	1165	21	15	706	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	101	86	147	102		1740	2384	43	670	1521	
Arrive On Green	0.04	0.05	0.05	0.04	0.05	0.00	0.50	0.36	0.36	0.38	0.24	0.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	6557	118	1781	6696	0
Grp Volume(v), veh/h	34	3	21	36	4	0	439	857	329	15	706	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1609	1849	1781	1609	0
Q Serve(g_s), s	2.1	0.2	1.4	1.1	0.2	0.0	7.9	15.1	15.1	0.6	10.4	0.0
Cycle Q Clear(g_c), s	2.1	0.2	1.4	1.1	0.2	0.0	7.9	15.1	15.1	0.6	10.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	75	101	86	147	102		1740	1755	672	670	1521	
V/C Ratio(X)	0.46	0.03	0.25	0.25	0.04		0.25	0.49	0.49	0.02	0.46	
Avail Cap(c_a), veh/h	113	646	548	220	646		1740	1755	672	670	1521	
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	49.3	49.9	51.0	49.3	0.0	15.5	27.1	27.1	21.6	36.0	0.0
Incr Delay (d2), s/veh	4.3	0.1	1.5	0.9	0.2	0.0	0.1	1.0	2.5	0.0	1.0	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	1.0	0.1	0.6	0.5	0.1	0.0	3.0	5.8	6.9	0.2	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	49.4	51.3	51.8	49.4	0.0	15.6	28.1	29.6	21.6	37.0	0.0
LnGrp LOS	E	D	D	D	D		B	C	C	C	D	
Approach Vol, veh/h		58			40	A		1625			721	A
Approach Delay, s/veh		53.8			51.6			25.0			36.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.4	45.0	8.7	10.9	59.4	31.0	8.6	11.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	40.0	7.0	38.0	21.0	26.0	7.0	38.0
Max Q Clear Time (g_c+I1), s	2.6	17.1	3.1	3.4	9.9	12.4	4.1	2.2
Green Ext Time (p_c), s	0.0	8.1	0.0	0.1	1.2	3.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Notes

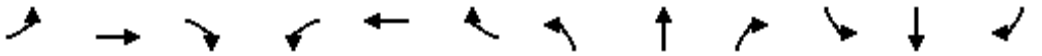
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	31	660	585	76	0	71
Future Volume (vph)	31	660	585	76	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	5.0	5.0		5.0
Lane Util. Factor	1.00	0.91	0.91	1.00		1.00
Frt	1.00	1.00	1.00	0.85		0.86
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	5085	5085	1583		1611
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	5085	5085	1583		1611
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	35	750	665	86	0	81
RTOR Reduction (vph)	0	0	0	30	0	67
Lane Group Flow (vph)	35	750	665	56	0	14
Turn Type	Prot	NA	NA	Perm		Perm
Protected Phases	7	Free	8			
Permitted Phases				8		6
Actuated Green, G (s)	4.2	110.0	71.8	71.8		19.0
Effective Green, g (s)	4.2	110.0	71.8	71.8		19.0
Actuated g/C Ratio	0.04	1.00	0.65	0.65		0.17
Clearance Time (s)	5.0		5.0	5.0		5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	67	5085	3319	1033		278
v/s Ratio Prot	c0.02	0.15	c0.13			
v/s Ratio Perm				0.04		0.01
v/c Ratio	0.52	0.15	0.20	0.05		0.05
Uniform Delay, d1	51.9	0.0	7.6	6.9		38.0
Progression Factor	0.81	1.00	0.69	1.18		1.00
Incremental Delay, d2	7.0	0.1	0.1	0.1		0.3
Delay (s)	49.0	0.1	5.4	8.2		38.3
Level of Service	D	A	A	A		D
Approach Delay (s)		2.2	5.7		38.3	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

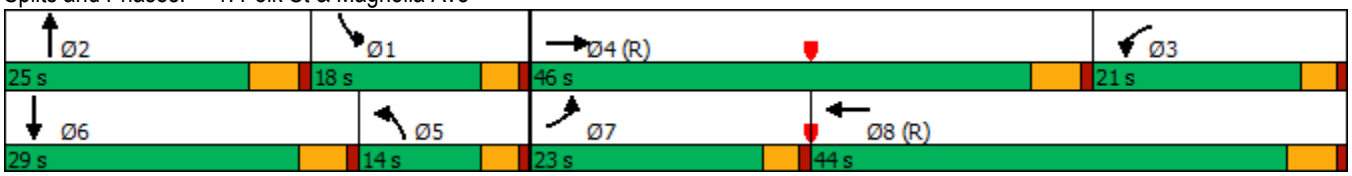


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	478	137	82	439	48	36	44	40	77	106	197
Future Volume (vph)	100	478	137	82	439	48	36	44	40	77	106	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	225		0	80		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.967			0.985			0.928			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3422	0	1770	3486	0	1770	1729	0	1770	3192	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3422	0	1770	3486	0	1770	1729	0	1770	3192	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			12			37			210	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		647			586			521			537	
Travel Time (s)		11.0			10.0			8.9			9.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	106	509	146	87	467	51	38	47	43	82	113	210
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	655	0	87	518	0	38	90	0	82	323	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		11.0	12.0		11.0	23.0	
Total Split (s)	23.0	46.0		21.0	44.0		14.0	25.0		18.0	29.0	
Total Split (%)	20.9%	41.8%		19.1%	40.0%		12.7%	22.7%		16.4%	26.4%	
Maximum Green (s)	19.0	41.0		17.0	39.0		10.0	20.0		14.0	24.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
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	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Walk Time (s)		7.0			7.0						7.0	
Flash Dont Walk (s)		14.0			14.0						11.0	
Pedestrian Calls (#/hr)		5			5						5	
Act Effct Green (s)	11.9	49.7		15.0	50.6		8.1	20.8		10.9	25.8	
Actuated g/C Ratio	0.11	0.45		0.14	0.46		0.07	0.19		0.10	0.23	
v/c Ratio	0.55	0.42		0.36	0.32		0.29	0.25		0.47	0.36	
Control Delay	56.9	22.5		21.4	3.5		53.7	26.1		55.0	13.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.9	22.5		21.4	3.5		53.7	26.1		55.0	13.8	
LOS	E	C		C	A		D	C		D	B	
Approach Delay		27.3			6.1			34.3			22.1	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	72	168		45	3		26	32		55	34	
Queue Length 95th (ft)	124	230		85	9		59	78		102	73	
Internal Link Dist (ft)		567			506			441			457	
Turn Bay Length (ft)	195			225			80			100		
Base Capacity (vph)	305	1567		273	1610		160	356		225	908	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.42		0.32	0.32		0.24	0.25		0.36	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 42 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 19.9		Intersection LOS: B	
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Polk St & Magnolia Ave



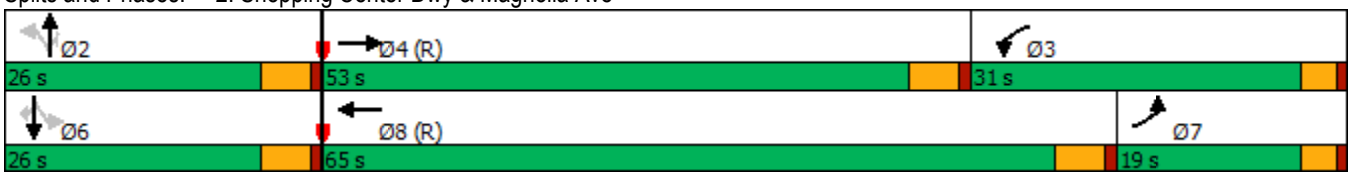
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	594	23	71	552	4	7	0	12	0	0	1
Future Volume (vph)	15	594	23	71	552	4	7	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	215		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5055	0	1770	3536	0	1770	1863	1583	1863	1863	1583
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5055	0	1770	3536	0	1410	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1				447			435
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		357			547			306			241	
Travel Time (s)		6.1			9.3			8.3			6.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	16	653	25	78	607	4	8	0	13	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	678	0	78	611	0	8	0	13	0	0	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	12.0	23.0		12.0	19.0		12.0	12.0	12.0	23.0	23.0	23.0
Total Split (s)	19.0	53.0		31.0	65.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	17.3%	48.2%		28.2%	59.1%		23.6%	23.6%	23.6%	23.6%	23.6%	23.6%
Maximum Green (s)	15.0	48.0		27.0	60.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0			7.0					7.0	7.0	7.0
Flash Dont Walk (s)		11.0			7.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		5			5					5	5	5
Act Effct Green (s)	7.3	50.4		13.0	60.6		34.8		34.8			34.8
Actuated g/C Ratio	0.07	0.46		0.12	0.55		0.32		0.32			0.32
v/c Ratio	0.14	0.29		0.37	0.31		0.02		0.02			0.00
Control Delay	52.9	6.3		43.7	2.6		30.0		0.0			0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0			0.0
Total Delay	52.9	6.3		43.7	2.6		30.0		0.0			0.0
LOS	D	A		D	A		C		A			A
Approach Delay		7.4			7.2			11.4				
Approach LOS		A			A			B				
Queue Length 50th (ft)	12	45		60	16		4		0			0
Queue Length 95th (ft)	m30	51		109	21		17		0			0
Internal Link Dist (ft)		277			467			226			161	
Turn Bay Length (ft)	225			215								
Base Capacity (vph)	241	2319		434	1947		445		806			798
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	0.07	0.29		0.18	0.31		0.02		0.02			0.00

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 26 (24%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 7.4 Intersection LOS: A
Intersection Capacity Utilization 39.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Shopping Center Dwy & Magnolia Ave

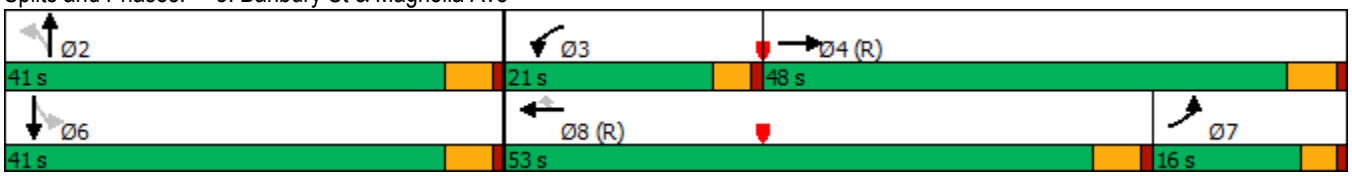


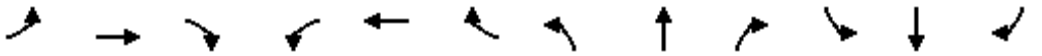
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	567	37	97	560	0	39	1	83	0	0	2
Future Volume (vph)	27	567	37	97	560	0	39	1	83	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	155		0	140		0	50		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991						0.852			0.850	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5040	0	1770	3539	1863	1770	1587	0	1863	1583	0
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5040	0	1770	3539	1863	1410	1587	0	1863	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11						94			347	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		547			546			332			305	
Travel Time (s)		9.3			9.3			9.1			8.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	31	644	42	110	636	0	44	1	94	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	686	0	110	636	0	44	95	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	36.0	36.0		36.0	36.0	
Total Split (s)	16.0	48.0		21.0	53.0	53.0	41.0	41.0		41.0	41.0	
Total Split (%)	14.5%	43.6%		19.1%	48.2%	48.2%	37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	12.0	43.0		17.0	48.0	48.0	36.0	36.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		11.0			11.0	11.0				24.0	24.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	10.0	47.9		12.1	54.4		36.0	36.0			36.0	
Actuated g/C Ratio	0.09	0.44		0.11	0.49		0.33	0.33			0.33	
v/c Ratio	0.19	0.31		0.57	0.36		0.10	0.16			0.00	
Control Delay	27.3	3.1		57.0	9.4		26.6	6.2			0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	27.3	3.1		57.0	9.4		26.6	6.2			0.0	
LOS	C	A		E	A		C	A			A	
Approach Delay		4.1			16.4			12.7				
Approach LOS		A			B			B				
Queue Length 50th (ft)	21	8		78	125		21	1			0	
Queue Length 95th (ft)	49	10		130	156		47	35			0	
Internal Link Dist (ft)		467			466			252			225	
Turn Bay Length (ft)	155			140			50					
Base Capacity (vph)	193	2200		273	1750		461	582			751	
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	0.16	0.31		0.40	0.36		0.10	0.16			0.00	

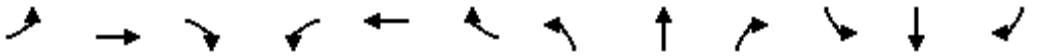
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 40 (36%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Banbury St & Magnolia Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	440	120	116	320	37	220	621	208	30	497	121
Future Volume (vph)	130	440	120	116	320	37	220	621	208	30	497	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		100	150		0	245		0	170		160
Storage Lanes	2		1	2		0	2		1	2		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850		0.984				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5004	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5004	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126		20				219			127
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		704			440			651			1448	
Travel Time (s)		12.0			7.5			11.1			24.7	
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
Adj. Flow (vph)	137	463	126	122	337	39	232	654	219	32	523	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	463	126	122	376	0	232	654	219	32	523	127
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6



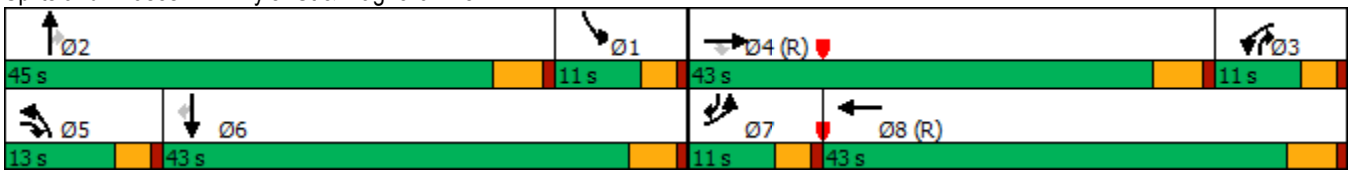
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	5	3	8		5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	43.0	11.0	11.0	43.0		11.0	40.0	11.0	11.0	43.0	11.0
Total Split (s)	11.0	43.0	13.0	11.0	43.0		13.0	45.0	11.0	11.0	43.0	11.0
Total Split (%)	10.0%	39.1%	11.8%	10.0%	39.1%		11.8%	40.9%	10.0%	10.0%	39.1%	10.0%
Maximum Green (s)	7.0	38.0	9.0	7.0	38.0		9.0	40.0	7.0	7.0	38.0	7.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
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	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		31.0			31.0			28.0			31.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effct Green (s)	8.7	54.8	64.8	7.0	53.2		9.0	26.6	38.6	8.0	21.2	34.8
Actuated g/C Ratio	0.08	0.50	0.59	0.06	0.48		0.08	0.24	0.35	0.07	0.19	0.32
v/c Ratio	0.51	0.18	0.13	0.56	0.15		0.83	0.53	0.31	0.13	0.53	0.22
Control Delay	44.0	6.6	3.4	42.5	0.8		62.7	31.9	5.9	37.6	31.9	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.0	6.6	3.4	42.5	0.8		62.7	31.9	5.9	37.6	31.9	4.7
LOS	D	A	A	D	A		E	C	A	D	C	A
Approach Delay		13.1			11.0			33.2			27.1	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	34	10	0	43	0		85	164	5	10	127	0
Queue Length 95th (ft)	#76	127	83	74	1		#135	208	0	26	49	1
Internal Link Dist (ft)		624			360			571			1368	
Turn Bay Length (ft)	130		100	150			245			170		160
Base Capacity (vph)	270	2535	984	218	2428		280	1849	697	249	1756	588
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.18	0.13	0.56	0.15		0.83	0.35	0.31	0.13	0.30	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 92 (84%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 23.3		Intersection LOS: C	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

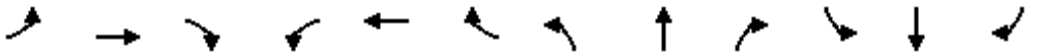
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Tyler St & Magnolia Ave



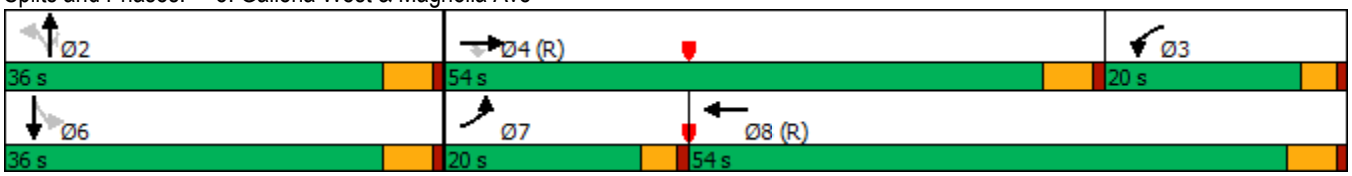
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	604	37	21	507	13	1	1	9	7	0	5
Future Volume (vph)	25	604	37	21	507	13	1	1	9	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		175	125		0	0		75	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.944	
Flt Protected	0.950			0.950			0.950				0.972	
Satd. Flow (prot)	1770	5085	1583	1770	5065	0	1770	1863	1583	0	1709	0
Flt Permitted	0.950			0.950			0.750				0.831	
Satd. Flow (perm)	1770	5085	1583	1770	5065	0	1397	1863	1583	0	1461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69		4				109		109	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		440			380			353			241	
Travel Time (s)		7.5			6.5			9.6			6.6	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	26	623	38	22	523	13	1	1	9	7	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	623	38	22	536	0	1	1	9	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		



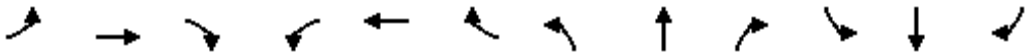
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	30.0	30.0	11.0	23.0		36.0	36.0	36.0	12.0	12.0	
Total Split (s)	20.0	54.0	54.0	20.0	54.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	18.2%	49.1%	49.1%	18.2%	49.1%		32.7%	32.7%	32.7%	32.7%	32.7%	
Maximum Green (s)	16.0	49.0	49.0	16.0	49.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	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)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		18.0	18.0		11.0		24.0	24.0	24.0			
Pedestrian Calls (#/hr)		5	5		5		5	5	5			
Act Effct Green (s)	7.6	90.4	90.4	10.6	90.2		11.8	11.8	11.8		11.8	
Actuated g/C Ratio	0.07	0.82	0.82	0.10	0.82		0.11	0.11	0.11		0.11	
v/c Ratio	0.21	0.15	0.03	0.13	0.13		0.01	0.01	0.03		0.05	
Control Delay	58.4	4.6	0.8	27.1	0.2		36.0	36.0	0.2		0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	58.4	4.6	0.8	27.1	0.2		36.0	36.0	0.2		0.3	
LOS	E	A	A	C	A		D	D	A		A	
Approach Delay		6.4			1.3			6.7			0.3	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	18	0	0	15	0		1	1	0		0	
Queue Length 95th (ft)	51	81	4	38	1		5	5	0		0	
Internal Link Dist (ft)		360			300			273			161	
Turn Bay Length (ft)	80		175	125					75			
Base Capacity (vph)	257	4179	1313	257	4152		393	525	524		490	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.10	0.15	0.03	0.09	0.13		0.00	0.00	0.02		0.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.21			
Intersection Signal Delay: 4.1		Intersection LOS: A	
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Galleria West & Magnolia Ave



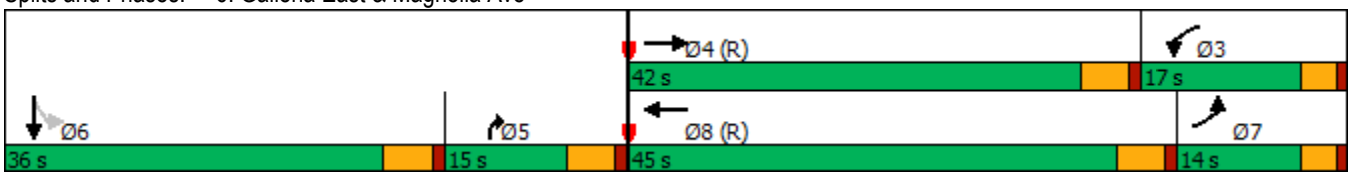
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	615	3	17	535	16	0	0	8	3	0	4
Future Volume (vph)	6	615	3	17	535	16	0	0	8	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		165	130		0	0		0	0		0
Storage Lanes	1		1	1		0	0		2	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.923	
Flt Protected	0.950			0.950							0.979	
Satd. Flow (prot)	1770	5085	1583	1770	5065	0	0	0	2787	0	1683	0
Flt Permitted	0.950			0.950							0.979	
Satd. Flow (perm)	1770	5085	1583	1770	5065	0	0	0	2787	0	1683	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			159		4						109	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		380			506			335			173	
Travel Time (s)		6.5			8.6			9.1			4.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	6	628	3	17	546	16	0	0	8	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	628	3	17	562	0	0	0	8	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2				1	1	2	
Detector Template	Left	Thru	Right	Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100				20	20	100	
Trailing Detector (ft)	0	0	0	0	0				0	0	0	
Detector 1 Position(ft)	0	0	0	0	0				0	0	0	
Detector 1 Size(ft)	20	6	20	20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot	NA	Free	Prot	NA				Prot	Perm	NA	
Protected Phases	7	4		3	8				5		6	
Permitted Phases			Free							6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8				5	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	19.0				12.0	36.0	36.0	
Total Split (s)	14.0	42.0		17.0	45.0				15.0	36.0	36.0	
Total Split (%)	12.7%	38.2%		15.5%	40.9%				13.6%	32.7%	32.7%	
Maximum Green (s)	10.0	37.0		13.0	40.0				10.0	31.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0				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	
Total Lost Time (s)	4.0	5.0		4.0	5.0				5.0		5.0	
Lead/Lag	Lag	Lead		Lag	Lead				Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max				None	Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		11.0			7.0					24.0	24.0	
Pedestrian Calls (#/hr)		5			5					5	5	
Act Effct Green (s)	7.0	51.4	110.0	7.6	54.2				7.0		41.2	
Actuated g/C Ratio	0.06	0.47	1.00	0.07	0.49				0.06		0.37	
v/c Ratio	0.05	0.26	0.00	0.14	0.22				0.05		0.01	
Control Delay	44.7	6.8	0.0	43.7	6.1				49.0		0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0				0.0		0.0	
Total Delay	44.7	6.8	0.0	43.7	6.1				49.0		0.0	
LOS	D	A	A	D	A				D		A	
Approach Delay		7.1			7.2			49.0				
Approach LOS		A			A			D				
Queue Length 50th (ft)	4	42	0	12	80				2		0	
Queue Length 95th (ft)	19	83	0	37	15				12		0	
Internal Link Dist (ft)		300			426			255			93	
Turn Bay Length (ft)	100		165	130								
Base Capacity (vph)	160	2376	1583	209	2499				253		697	
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	0.04	0.26	0.00	0.08	0.22				0.03		0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 77 (70%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Galleria East & Magnolia Ave

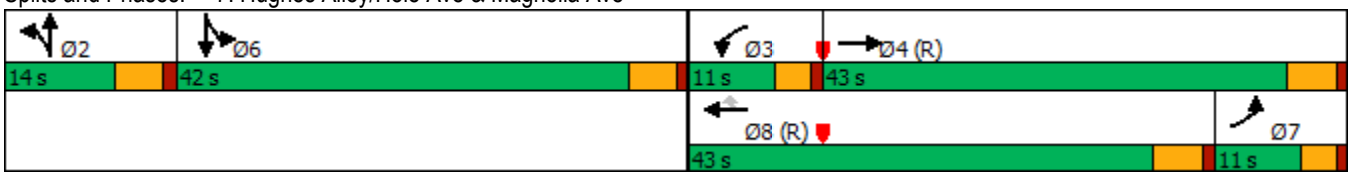


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	634	9	24	483	281	7	13	13	233	11	11
Future Volume (vph)	29	634	9	24	483	281	7	13	13	233	11	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		110	0		0	100		0
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	0.91	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.998				0.850		0.925			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5075	0	3433	5085	1583	1770	1723	0	3433	1723	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5075	0	3433	5085	1583	1770	1723	0	3433	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				299		14			12	
Link Speed (mph)		40			45			40			40	
Link Distance (ft)		506			714			431			1963	
Travel Time (s)		8.6			10.8			7.3			33.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	31	674	10	26	514	299	7	14	14	248	12	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	684	0	26	514	299	7	28	0	248	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

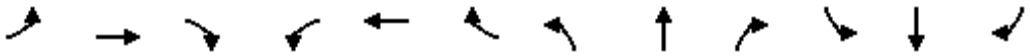
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	33.0	33.0	12.0	12.0		40.0	40.0	
Total Split (s)	11.0	43.0		11.0	43.0	43.0	14.0	14.0		42.0	42.0	
Total Split (%)	10.0%	39.1%		10.0%	39.1%	39.1%	12.7%	12.7%		38.2%	38.2%	
Maximum Green (s)	7.0	38.0		7.0	38.0	38.0	9.0	9.0		37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		None	None	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		14.0			21.0	21.0				28.0	28.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	7.0	62.4		7.1	62.5	62.5	9.0	9.0		16.9	16.9	
Actuated g/C Ratio	0.06	0.57		0.06	0.57	0.57	0.08	0.08		0.15	0.15	
v/c Ratio	0.14	0.24		0.12	0.18	0.29	0.05	0.18		0.47	0.09	
Control Delay	28.3	2.5		49.8	14.0	3.2	47.6	33.1		30.9	17.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	28.3	2.5		49.8	14.0	3.2	47.6	33.1		30.9	17.9	
LOS	C	A		D	B	A	D	C		C	B	
Approach Delay		3.6			11.3			36.0			29.8	
Approach LOS		A			B			D			C	
Queue Length 50th (ft)	10	16		9	61	0	5	9		96	11	
Queue Length 95th (ft)	23	17		23	122	56	19	38		105	30	
Internal Link Dist (ft)		426			634			351			1883	
Turn Bay Length (ft)	125			150		110				100		
Base Capacity (vph)	218	2879		220	2888	1028	144	153		1154	587	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.24		0.12	0.18	0.29	0.05	0.18		0.21	0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 82 (75%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 40.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 7: Hughes Alley/Hole Ave & Magnolia Ave



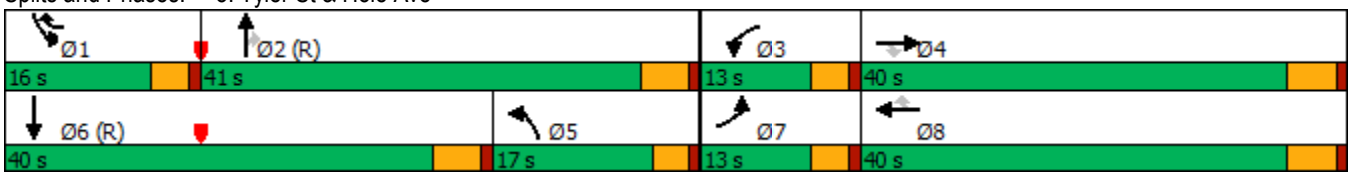
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	247	194	25	142	74	185	430	174	67	440	31
Future Volume (vph)	33	247	194	25	142	74	185	430	174	67	440	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	130		130	130		0	100		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	0.91
Frt			0.850			0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5034	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5034	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			109			181		10	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		702			1963			1448			757	
Travel Time (s)		12.0			33.5			24.7			12.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	34	257	202	26	148	77	193	448	181	70	458	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	257	202	26	148	77	193	448	181	70	490	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			



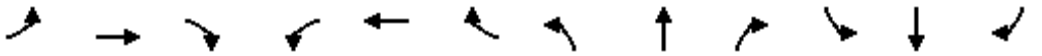
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	36.0	36.0	11.0	33.0	11.0	11.0	33.0	33.0	11.0	33.0	
Total Split (s)	13.0	40.0	40.0	13.0	40.0	16.0	17.0	41.0	41.0	16.0	40.0	
Total Split (%)	11.8%	36.4%	36.4%	11.8%	36.4%	14.5%	15.5%	37.3%	37.3%	14.5%	36.4%	
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	12.0	13.0	36.0	36.0	12.0	35.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
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	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		24.0	24.0		21.0			21.0	21.0		21.0	
Pedestrian Calls (#/hr)		5	5		5			5	5		5	
Act Effct Green (s)	7.8	16.4	16.4	7.6	16.1	31.0	13.0	64.8	64.8	9.9	59.5	
Actuated g/C Ratio	0.07	0.15	0.15	0.07	0.15	0.28	0.12	0.59	0.59	0.09	0.54	
v/c Ratio	0.27	0.49	0.50	0.21	0.29	0.15	0.48	0.22	0.18	0.44	0.18	
Control Delay	53.7	44.8	9.2	55.6	40.4	2.9	22.1	5.5	1.9	55.5	15.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.7	44.8	9.2	55.6	40.4	2.9	22.1	5.5	1.9	55.5	15.1	
LOS	D	D	A	E	D	A	C	A	A	E	B	
Approach Delay		30.8			30.5			8.6			20.2	
Approach LOS		C			C			A			C	
Queue Length 50th (ft)	23	91	0	19	52	0	26	35	0	48	61	
Queue Length 95th (ft)	55	109	54	48	58	1	44	48	6	91	116	
Internal Link Dist (ft)		622			1883			1368			677	
Turn Bay Length (ft)	100		100	130		130	130			100		
Base Capacity (vph)	144	1126	641	144	1126	556	405	2083	1006	197	2725	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.24	0.23	0.32	0.18	0.13	0.14	0.48	0.22	0.18	0.36	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 32 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 45.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Tyler St & Hole Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	5	24	3	8	46	1035	48	10	734	3
Future Volume (vph)	5	2	5	24	3	8	46	1035	48	10	734	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		115	215		0	170		0
Storage Lanes	0		0	1		1	1		0	2		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.91	0.91
Frt		0.944				0.850		0.993			0.999	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	1723	0	1770	1863	1583	1770	6363	0	3433	5080	0
Flt Permitted		0.905		0.750			0.950			0.950		
Satd. Flow (perm)	0	1591	0	1397	1863	1583	1770	6363	0	3433	5080	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				109		10			1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		221			241			548			651	
Travel Time (s)		6.0			6.6			9.3			11.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	2	5	25	3	8	47	1067	49	10	757	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	25	3	8	47	1116	0	10	760	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						

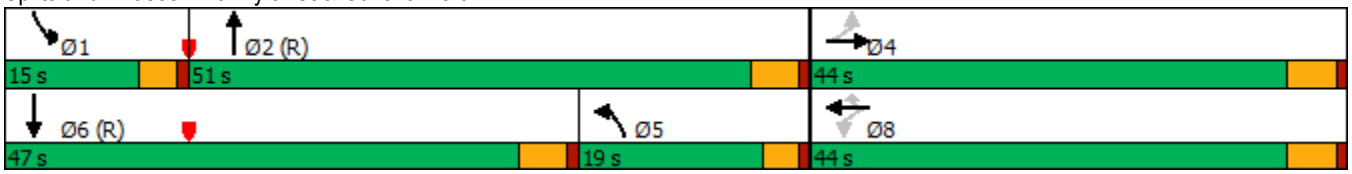


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	40.0	40.0		43.0	43.0	43.0	11.0	30.0		11.0	23.0	
Total Split (s)	44.0	44.0		44.0	44.0	44.0	19.0	51.0		15.0	47.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	17.3%	46.4%		13.6%	42.7%	
Maximum Green (s)	39.0	39.0		39.0	39.0	39.0	15.0	46.0		11.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
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	
Total Lost Time (s)		5.0		5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	28.0	28.0		31.0	31.0	31.0		18.0			11.0	
Pedestrian Calls (#/hr)	5	5		5	5	5		5			5	
Act Effct Green (s)		13.6		13.6	13.6	13.6	13.4	91.0		7.0	77.0	
Actuated g/C Ratio		0.12		0.12	0.12	0.12	0.12	0.83		0.06	0.70	
v/c Ratio		0.06		0.15	0.01	0.03	0.22	0.21		0.05	0.21	
Control Delay		26.8		39.4	33.3	0.1	30.6	1.9		39.8	11.2	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		26.8		39.4	33.3	0.1	30.6	1.9		39.8	11.2	
LOS		C		D	C	A	C	A		D	B	
Approach Delay		26.8			30.2			3.1			11.5	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		5		17	2	0	30	29		2	35	
Queue Length 95th (ft)		17		31	8	0	51	14		m0	223	
Internal Link Dist (ft)		141			161			468			571	
Turn Bay Length (ft)						115	215			170		
Base Capacity (vph)		567		495	660	631	241	5267		343	3557	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.02		0.05	0.00	0.01	0.20	0.21		0.03	0.21	

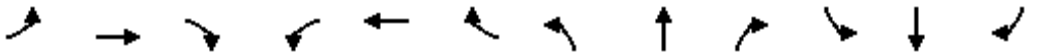
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 96 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 7.0		Intersection LOS: A	
Intersection Capacity Utilization 40.0%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 9: Tyler St & Galleria North



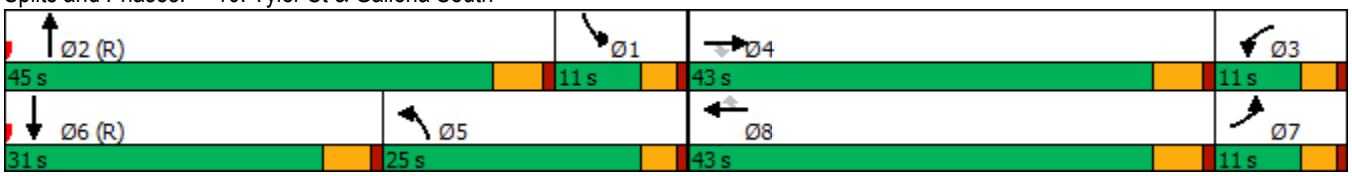
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	3	20	35	4	6	426	1130	20	15	685	38
Future Volume (vph)	33	3	20	35	4	6	426	1130	20	15	685	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		50	240		0	155		0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.86	0.86	1.00	0.86	0.86
Frt			0.850			0.850		0.997			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	3433	6389	0	1770	6357	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	3433	6389	0	1770	6357	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149			149		3			9	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		267			252			595			487	
Travel Time (s)		7.3			6.9			10.1			8.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	34	3	21	36	4	6	439	1165	21	15	706	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	3	21	36	4	6	439	1186	0	15	745	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						

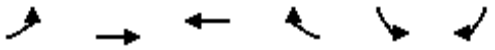


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	12.0	12.0	11.0	43.0	43.0	11.0	26.0		11.0	30.0	
Total Split (s)	11.0	43.0	43.0	11.0	43.0	43.0	25.0	45.0		11.0	31.0	
Total Split (%)	10.0%	39.1%	39.1%	10.0%	39.1%	39.1%	22.7%	40.9%		10.0%	28.2%	
Maximum Green (s)	7.0	38.0	38.0	7.0	38.0	38.0	21.0	40.0		7.0	26.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	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	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)					7.0	7.0		7.0			7.0	
Flash Dont Walk (s)					31.0	31.0		14.0			18.0	
Pedestrian Calls (#/hr)					5	5		5			5	
Act Effct Green (s)	9.7	7.0	7.0	13.5	13.2	13.2	18.6	82.3		7.0	62.1	
Actuated g/C Ratio	0.09	0.06	0.06	0.12	0.12	0.12	0.17	0.75		0.06	0.56	
v/c Ratio	0.22	0.03	0.09	0.09	0.02	0.02	0.76	0.25		0.13	0.21	
Control Delay	50.5	49.0	0.7	38.3	34.5	0.2	52.4	10.0		53.0	1.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.5	49.0	0.7	38.3	34.5	0.2	52.4	10.0		53.0	1.4	
LOS	D	D	A	D	C	A	D	A		D	A	
Approach Delay		32.4			33.0			21.4			2.4	
Approach LOS		C			C			C			A	
Queue Length 50th (ft)	20	2	0	12	3	0	153	64		11	7	
Queue Length 95th (ft)	56	12	0	20	10	0	204	222		34	10	
Internal Link Dist (ft)		187			172			515			407	
Turn Bay Length (ft)				150		50	240			155		
Base Capacity (vph)	156	643	644	421	643	644	655	4779		112	3594	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.22	0.00	0.03	0.09	0.01	0.01	0.67	0.25		0.13	0.21	

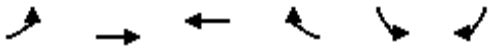
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 95 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 42.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Tyler St & Galleria South





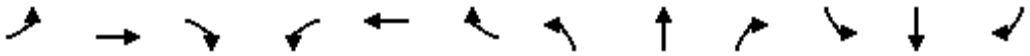
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	31	660	585	76	0	71
Future Volume (vph)	31	660	585	76	0	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected	0.950					
Satd. Flow (prot)	1770	5085	5085	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	5085	5085	1583	0	1611
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				86		350
Link Speed (mph)		40	40		25	
Link Distance (ft)		546	704		334	
Travel Time (s)		9.3	12.0		9.1	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	35	750	665	86	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	750	665	86	0	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1		1
Detector Template	Left	Thru	Thru	Right		Right
Leading Detector (ft)	20	100	100	20		20
Trailing Detector (ft)	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0		0
Detector 1 Size(ft)	20	6	6	20		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm		Perm
Protected Phases	7	Free	8			
Permitted Phases				8		6
Detector Phase	7		8	8		6
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0		7.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	12.0		19.0	19.0		12.0
Total Split (s)	12.0		74.0	74.0		24.0
Total Split (%)	10.9%		67.3%	67.3%		21.8%
Maximum Green (s)	7.0		69.0	69.0		19.0
Yellow Time (s)	4.0		4.0	4.0		4.0
All-Red Time (s)	1.0		1.0	1.0		1.0
Lost Time Adjust (s)	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0		5.0	5.0		5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Recall Mode	None		C-Max	C-Max		Max
Walk Time (s)			7.0	7.0		
Flash Dont Walk (s)			7.0	7.0		
Pedestrian Calls (#/hr)			5	5		
Act Effct Green (s)	7.0	110.0	73.8	73.8		19.0
Actuated g/C Ratio	0.06	1.00	0.67	0.67		0.17
v/c Ratio	0.31	0.15	0.19	0.08		0.14
Control Delay	47.2	0.1	5.3	2.2		0.5
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	47.2	0.1	5.3	2.2		0.5
LOS	D	A	A	A		A
Approach Delay		2.2	4.9		0.5	
Approach LOS		A	A		A	
Queue Length 50th (ft)	26	0	69	2		0
Queue Length 95th (ft)	59	0	44	m0		0
Internal Link Dist (ft)		466	624		254	
Turn Bay Length (ft)						
Base Capacity (vph)	112	5085	3411	1090		567
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	0.31	0.15	0.19	0.08		0.14

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 8:WBT, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 3.4		Intersection LOS: A	
Intersection Capacity Utilization 25.5%		ICU Level of Service A	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 11: Magnolia Ave & Project Dwy



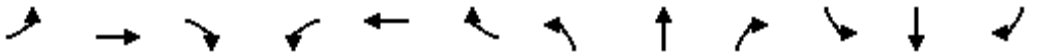
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	806	30	61	780	112	124	134	125	101	56	146
Future Volume (veh/h)	210	806	30	61	780	112	124	134	125	101	56	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	216	831	31	63	804	115	128	138	129	104	58	151
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1556	58	162	1267	181	211	194	181	130	307	274
Arrive On Green	0.14	0.45	0.45	0.09	0.41	0.41	0.12	0.22	0.22	0.07	0.17	0.17
Sat Flow, veh/h	1781	3493	130	1781	3121	446	1781	889	831	1781	1777	1585
Grp Volume(v), veh/h	216	423	439	63	458	461	128	0	267	104	58	151
Grp Sat Flow(s),veh/h/ln	1781	1777	1847	1781	1777	1790	1781	0	1721	1781	1777	1585
Q Serve(g_s), s	13.1	19.0	19.0	3.7	22.7	22.7	7.5	0.0	15.8	6.3	3.1	9.6
Cycle Q Clear(g_c), s	13.1	19.0	19.0	3.7	22.7	22.7	7.5	0.0	15.8	6.3	3.1	9.6
Prop In Lane	1.00		0.07	1.00		0.25	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	248	792	823	162	721	727	211	0	375	130	307	274
V/C Ratio(X)	0.87	0.53	0.53	0.39	0.63	0.63	0.61	0.00	0.71	0.80	0.19	0.55
Avail Cap(c_a), veh/h	340	792	823	162	721	727	243	0	375	162	307	274
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	22.2	22.2	47.1	26.1	26.1	46.1	0.0	39.8	50.2	38.9	41.6
Incr Delay (d2), s/veh	16.3	2.6	2.5	1.5	4.2	4.2	3.4	0.0	10.9	20.1	1.4	7.8
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	6.8	8.1	8.4	1.7	10.0	10.0	3.4	0.0	7.6	3.5	1.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	24.8	24.7	48.7	30.4	30.3	49.4	0.0	50.7	70.3	40.3	49.4
LnGrp LOS	E	C	C	D	C	C	D	A	D	E	D	D
Approach Vol, veh/h		1078			982			395			313	
Approach Delay, s/veh		32.3			31.5			50.3			54.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	29.0	15.0	54.0	17.0	24.0	19.3	49.7
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	24.0	9.0	* 49	15.0	19.0	21.0	37.0
Max Q Clear Time (g_c+I1), s	8.3	17.8	5.7	21.0	9.5	11.6	15.1	24.7
Green Ext Time (p_c), s	0.0	0.7	0.0	5.6	0.1	0.6	0.3	4.4

Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

Notes

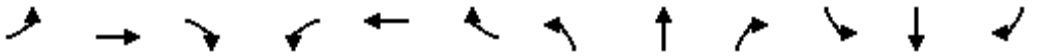
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1005	39	91	845	8	46	0	76	0	0	9
Future Volume (veh/h)	22	1005	39	91	845	8	46	0	76	0	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	1069	41	97	899	9	49	0	81	0	0	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	2340	90	389	1999	20	334	357	303	65	357	303
Arrive On Green	0.13	0.46	0.46	0.44	1.00	1.00	0.19	0.00	0.19	0.00	0.00	0.19
Sat Flow, veh/h	1781	5046	193	1781	3605	36	1405	1870	1585	1317	1870	1585
Grp Volume(v), veh/h	23	721	389	97	443	465	49	0	81	0	0	10
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1777	1864	1405	1870	1585	1317	1870	1585
Q Serve(g_s), s	1.3	15.9	15.9	3.8	0.0	0.0	3.2	0.0	4.8	0.0	0.0	0.6
Cycle Q Clear(g_c), s	1.3	15.9	15.9	3.8	0.0	0.0	3.2	0.0	4.8	0.0	0.0	0.6
Prop In Lane	1.00		0.11	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	1578	851	389	985	1034	334	357	303	65	357	303
V/C Ratio(X)	0.10	0.46	0.46	0.25	0.45	0.45	0.15	0.00	0.27	0.00	0.00	0.03
Avail Cap(c_a), veh/h	227	1578	851	389	985	1034	334	357	303	65	357	303
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	20.1	20.1	25.3	0.0	0.0	37.3	0.0	37.9	0.0	0.0	36.2
Incr Delay (d2), s/veh	0.2	1.0	1.8	0.3	1.3	1.2	0.9	0.0	2.2	0.0	0.0	0.2
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	0.6	6.2	6.8	1.5	0.4	0.4	1.2	0.0	2.0	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	21.0	21.8	25.6	1.3	1.2	38.2	0.0	40.1	0.0	0.0	36.4
LnGrp LOS	D	C	C	C	A	A	D	A	D	A	A	D
Approach Vol, veh/h		1133			1005			130			10	
Approach Delay, s/veh		21.7			3.6			39.4			36.4	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	28.0	56.0		26.0	18.0	66.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		21.0	24.0	51.0		21.0	14.0	61.0				
Max Q Clear Time (g_c+I1), s		6.8	5.8	17.9		2.6	3.3	2.0				
Green Ext Time (p_c), s		0.3	0.2	8.3		0.0	0.0	6.4				

Intersection Summary												
HCM 6th Ctrl Delay			14.8									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1038	46	269	884	13	46	13	85	11	2	23
Future Volume (veh/h)	45	1038	46	269	884	13	46	13	85	11	2	23
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	1070	47	277	911	13	47	13	88	11	2	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	2044	90	310	1777	793	452	61	410	381	36	431
Arrive On Green	0.15	0.82	0.82	0.06	0.17	0.17	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	5015	220	1781	3554	1585	1385	208	1409	1294	123	1480
Grp Volume(v), veh/h	46	726	391	277	911	13	47	0	101	11	0	26
Grp Sat Flow(s),veh/h/ln	1781	1702	1831	1781	1777	1585	1385	0	1617	1294	0	1604
Q Serve(g_s), s	2.6	7.6	7.6	17.0	25.7	0.8	2.8	0.0	5.2	0.7	0.0	1.3
Cycle Q Clear(g_c), s	2.6	7.6	7.6	17.0	25.7	0.8	4.1	0.0	5.2	5.9	0.0	1.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.87	1.00		0.92
Lane Grp Cap(c), veh/h	130	1388	746	310	1777	793	452	0	470	381	0	467
V/C Ratio(X)	0.36	0.52	0.52	0.89	0.51	0.02	0.10	0.00	0.21	0.03	0.00	0.06
Avail Cap(c_a), veh/h	146	1388	746	340	1777	793	452	0	470	381	0	467
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.96	0.96	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	6.7	6.7	50.8	33.7	23.3	29.6	0.0	29.5	31.7	0.0	28.1
Incr Delay (d2), s/veh	1.5	1.3	2.3	22.4	1.0	0.0	0.5	0.0	1.0	0.1	0.0	0.2
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	1.1	2.0	2.4	10.0	12.4	0.3	1.0	0.0	2.2	0.2	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	8.0	9.1	73.3	34.7	23.3	30.0	0.0	30.5	31.9	0.0	28.3
LnGrp LOS	D	A	A	E	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1163			1201			148			37	
Approach Delay, s/veh		9.8			43.5			30.4			29.4	
Approach LOS		A			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		37.0	23.2	49.8		37.0	13.0	60.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	5.0	* 5				
Max Green Setting (Gmax), s		32.0	21.0	43.0		32.0	9.0	* 55				
Max Q Clear Time (g_c+I1), s		7.2	19.0	9.6		7.9	4.6	27.7				
Green Ext Time (p_c), s		0.7	0.2	8.4		0.1	0.0	6.8				

Intersection Summary		
HCM 6th Ctrl Delay		27.2
HCM 6th LOS		C

Notes

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

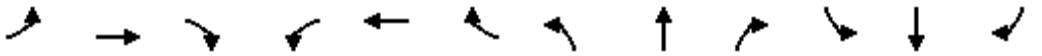
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	692	295	279	583	160	327	735	328	231	648	177
Future Volume (veh/h)	183	692	295	279	583	160	327	735	328	231	648	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	706	301	285	595	163	334	750	335	236	661	181
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	1764	684	679	1922	516	298	1016	627	299	970	414
Arrive On Green	0.07	0.35	0.35	0.39	0.96	0.96	0.17	0.40	0.40	0.03	0.06	0.06
Sat Flow, veh/h	3456	5106	1585	3456	4006	1075	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	187	706	301	285	504	254	334	750	335	236	661	181
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1677	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	5.8	11.6	5.2	6.6	0.9	1.0	9.5	13.8	3.7	7.5	13.9	7.9
Cycle Q Clear(g_c), s	5.8	11.6	5.2	6.6	0.9	1.0	9.5	13.8	3.7	7.5	13.9	7.9
Prop In Lane	1.00		1.00	1.00		0.64	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	246	1764	684	679	1634	805	298	1016	627	299	970	414
V/C Ratio(X)	0.76	0.40	0.44	0.42	0.31	0.32	1.12	0.74	0.53	0.79	0.68	0.44
Avail Cap(c_a), veh/h	251	1764	684	679	1634	805	298	1671	830	314	1764	660
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.98	0.98	0.98	0.93	0.93	0.93	0.95	0.95	0.95	0.89	0.89	0.89
Uniform Delay (d), s/veh	50.2	27.3	21.9	28.8	1.2	1.2	45.5	30.7	8.3	52.4	48.3	21.2
Incr Delay (d2), s/veh	12.2	0.7	2.0	0.4	0.5	1.0	87.5	1.0	0.7	11.1	0.8	0.6
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	2.9	4.7	5.6	2.5	0.4	0.5	7.2	4.6	2.7	3.8	6.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.4	28.0	23.9	29.2	1.6	2.1	133.0	31.7	9.0	63.5	49.1	21.9
LnGrp LOS	E	C	C	C	A	A	F	C	A	E	D	C
Approach Vol, veh/h		1194			1043			1419			1078	
Approach Delay, s/veh		32.4			9.3			50.2			47.7	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	26.9	26.6	43.0	14.5	25.9	11.8	57.8
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	10.0	36.0	8.0	* 38	8.0	* 38	8.0	38.0
Max Q Clear Time (g_c+I1), s	9.5	15.8	8.6	13.6	11.5	15.9	7.8	3.0
Green Ext Time (p_c), s	0.0	6.1	0.0	6.0	0.0	5.0	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	948	205	50	858	41	93	8	70	62	16	97
Future Volume (veh/h)	112	948	205	50	858	41	93	8	70	62	16	97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	1042	225	55	943	45	102	9	77	68	18	107
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	638	2182	677	524	1816	87	202	283	240	113	34	128
Arrive On Green	0.72	0.85	0.85	0.59	0.73	0.73	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5106	1585	1781	4994	238	1266	1870	1585	456	223	845
Grp Volume(v), veh/h	123	1042	225	55	642	346	102	9	77	193	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1828	1266	1870	1585	1524	0	0
Q Serve(g_s), s	2.5	5.5	3.2	1.5	9.1	9.1	0.0	0.5	4.8	11.2	0.0	0.0
Cycle Q Clear(g_c), s	2.5	5.5	3.2	1.5	9.1	9.1	13.3	0.5	4.8	13.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	0.35		0.55
Lane Grp Cap(c), veh/h	638	2182	677	524	1238	665	202	283	240	275	0	0
V/C Ratio(X)	0.19	0.48	0.33	0.10	0.52	0.52	0.50	0.03	0.32	0.70	0.00	0.00
Avail Cap(c_a), veh/h	638	2182	677	524	1238	665	425	612	519	538	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.4	5.0	4.8	16.3	10.8	10.8	45.3	39.8	41.7	45.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	1.1	0.1	1.4	2.5	1.9	0.0	0.8	3.3	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	0.9	1.4	1.1	0.6	2.6	3.1	2.8	0.2	1.9	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	5.6	6.0	16.3	12.1	13.3	47.2	39.9	42.4	48.5	0.0	0.0
LnGrp LOS	B	A	A	B	B	B	D	D	D	D	A	A
Approach Vol, veh/h		1390			1043			188			193	
Approach Delay, s/veh		6.1			12.8			44.9			48.5	
Approach LOS		A			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.6	36.4	52.0		21.6	43.4	45.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		36.0	13.0	47.0		36.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s		15.3	3.5	7.5		15.5	4.5	11.1				
Green Ext Time (p_c), s		0.6	0.1	9.7		1.1	0.2	6.9				

Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1020	41	104	947	22	0	0	122	20	0	35
Future Volume (veh/h)	31	1020	41	104	947	22	0	0	122	20	0	35
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	1870	1870	1870	1870	1870	1870	0	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1074	0	109	997	23	0	0	128	21	0	37
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, %	2	2	2	2	2	2	0	0	2	2	2	2
Cap, veh/h	372	1625		486	1961	45	0	0	0	0	0	0
Arrive On Green	0.42	0.64	0.00	0.55	0.76	0.76	0.00	0.00	0.00	0.28	0.00	0.28
Sat Flow, veh/h	1781	5106	1585	1781	5135	118		0		0	0	0
Grp Volume(v), veh/h	33	1074	0	109	661	359		0.0		58	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1849				0	0	0
Q Serve(g_s), s	1.2	14.5	0.0	3.5	8.2	8.3				0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	14.5	0.0	3.5	8.2	8.3				0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06				0.36		0.64
Lane Grp Cap(c), veh/h	372	1625		486	1300	706				0	0	0
V/C Ratio(X)	0.09	0.66		0.22	0.51	0.51				0.00	0.00	0.00
Avail Cap(c_a), veh/h	372	1625		486	1300	706				0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.00	0.90	0.90	0.90				1.00	0.00	0.00
Uniform Delay (d), s/veh	25.7	16.3	0.0	19.0	9.0	9.0				28.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.0	0.0	0.2	1.3	2.4				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	0.5	4.1	0.0	1.4	2.3	2.8				1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	18.3	0.0	19.2	10.3	11.4				28.4	0.0	0.0
LnGrp LOS	C	B		B	B	B				C	A	A
Approach Vol, veh/h		1107	A		1129						58	
Approach Delay, s/veh		18.5			11.5						28.4	
Approach LOS		B			B						C	

Timer - Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			34.0	40.0		36.0	27.0	47.0				
Change Period (Y+Rc), s			4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s			14.0	35.0		31.0	7.0	42.0				
Max Q Clear Time (g_c+I1), s			5.5	16.5		2.0	3.2	10.3				
Green Ext Time (p_c), s			0.1	7.0		0.3	0.0	7.3				

Intersection Summary												
HCM 6th Ctrl Delay			15.3									
HCM 6th LOS			B									

Notes

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

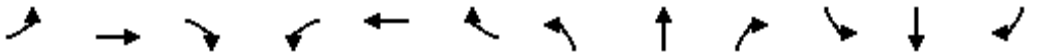
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1047	33	173	878	427	55	80	123	549	117	63
Future Volume (veh/h)	66	1047	33	173	878	427	55	80	123	549	117	63
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	1114	35	184	934	454	59	85	131	584	124	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	560	2036	64	245	1532	476	259	97	149	728	241	130
Arrive On Green	0.32	0.80	0.80	0.07	0.30	0.30	0.15	0.15	0.15	0.07	0.07	0.07
Sat Flow, veh/h	3456	5086	160	3456	5106	1585	1781	664	1023	3456	1142	617
Grp Volume(v), veh/h	70	745	404	184	934	454	59	0	216	584	0	191
Grp Sat Flow(s),veh/h/ln	1728	1702	1842	1728	1702	1585	1781	0	1686	1728	0	1759
Q Serve(g_s), s	1.6	8.6	8.6	5.7	17.2	30.9	3.2	0.0	13.8	18.3	0.0	11.5
Cycle Q Clear(g_c), s	1.6	8.6	8.6	5.7	17.2	30.9	3.2	0.0	13.8	18.3	0.0	11.5
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.61	1.00		0.35
Lane Grp Cap(c), veh/h	560	1362	737	245	1532	476	259	0	245	728	0	371
V/C Ratio(X)	0.13	0.55	0.55	0.75	0.61	0.95	0.23	0.00	0.88	0.80	0.00	0.52
Avail Cap(c_a), veh/h	560	1362	737	283	1532	476	259	0	245	1100	0	560
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	0.83	0.00	0.83
Uniform Delay (d), s/veh	31.7	7.4	7.4	50.2	33.0	37.8	41.5	0.0	46.1	48.9	0.0	45.8
Incr Delay (d2), s/veh	0.1	1.2	2.2	9.3	1.8	31.4	2.0	0.0	33.4	2.1	0.0	0.9
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	0.6	2.2	2.6	2.7	7.0	15.5	1.5	0.0	7.9	8.7	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	8.6	9.6	59.5	34.8	69.2	43.6	0.0	79.5	51.1	0.0	46.7
LnGrp LOS	C	A	A	E	C	E	D	A	E	D	A	D
Approach Vol, veh/h		1219			1572			275			775	
Approach Delay, s/veh		10.3			47.6			71.8			50.0	
Approach LOS		B			D			E			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	21.0	11.8	49.0	28.2	22.8	38.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	5.0	* 5
Max Green Setting (Gmax), s	16.0	9.0	31.0	35.0	7.0	* 33
Max Q Clear Time (g_c+I1), s	15.8	7.7	10.6	20.3	3.6	32.9
Green Ext Time (p_c), s	0.0	0.1	7.4	2.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	370	253	158	419	225	314	581	103	145	585	67
Future Volume (veh/h)	91	370	253	158	419	225	314	581	103	145	585	67
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	394	269	168	446	239	334	618	0	154	622	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	616	275	201	805	799	402	905		494	2169	
Arrive On Green	0.07	0.17	0.17	0.04	0.07	0.07	0.12	0.25	0.00	0.28	0.42	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	1781	5274	0
Grp Volume(v), veh/h	97	394	269	168	446	239	334	618	0	154	622	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1781	1702	0
Q Serve(g_s), s	5.9	11.3	14.1	10.3	13.3	2.2	10.4	17.3	0.0	7.5	8.8	0.0
Cycle Q Clear(g_c), s	5.9	11.3	14.1	10.3	13.3	2.2	10.4	17.3	0.0	7.5	8.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	122	616	275	201	805	799	402	905		494	2169	
V/C Ratio(X)	0.79	0.64	0.98	0.84	0.55	0.30	0.83	0.68		0.31	0.29	
Avail Cap(c_a), veh/h	194	1001	447	275	1163	959	503	905		494	2169	
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	0.79	0.79	0.79	0.84	0.84	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.5	42.3	26.2	51.9	45.5	8.1	47.5	37.0	0.0	31.4	20.7	0.0
Incr Delay (d2), s/veh	10.9	1.1	28.7	12.1	0.5	0.2	7.9	3.5	0.0	0.4	0.3	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	2.9	4.9	7.3	5.5	6.4	2.1	4.8	7.7	0.0	3.2	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	43.4	54.8	64.0	46.0	8.3	55.4	40.5	0.0	31.8	21.1	0.0
LnGrp LOS	E	D	D	E	D	A	E	D		C	C	
Approach Vol, veh/h		760			853			952	A		776	A
Approach Delay, s/veh		49.7			39.0			45.7			23.2	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.5	33.0	17.4	24.1	16.8	51.7	11.6	29.9
Change Period (Y+Rc), s	5.0	* 5	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	16.0	* 28	17.0	* 31	16.0	28.0	12.0	36.0
Max Q Clear Time (g_c+I1), s	9.5	19.3	12.3	16.1	12.4	10.8	7.9	15.3
Green Ext Time (p_c), s	0.2	2.5	0.2	2.9	0.4	3.7	0.1	3.5

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.

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	10	27	127	6	38	93	1275	99	69	1116	28
Future Volume (veh/h)	42	10	27	127	6	38	93	1275	99	69	1116	28
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	10	28	131	6	39	96	1314	102	71	1151	29
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	36	59	225	211	178	690	2677	207	1119	1909	48
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.39	0.44	0.44	0.65	0.75	0.75
Sat Flow, veh/h	676	320	526	1370	1870	1585	1781	6135	475	3456	5122	129
Grp Volume(v), veh/h	81	0	0	131	6	39	96	1033	383	71	765	415
Grp Sat Flow(s),veh/h/ln	1523	0	0	1370	1870	1585	1781	1609	1785	1728	1702	1847
Q Serve(g_s), s	3.5	0.0	0.0	4.6	0.3	2.5	3.8	16.9	17.0	0.8	11.4	11.4
Cycle Q Clear(g_c), s	5.3	0.0	0.0	9.9	0.3	2.5	3.8	16.9	17.0	0.8	11.4	11.4
Prop In Lane	0.53		0.35	1.00		1.00	1.00		0.27	1.00		0.07
Lane Grp Cap(c), veh/h	222	0	0	225	211	178	690	2106	779	1119	1269	688
V/C Ratio(X)	0.37	0.00	0.00	0.58	0.03	0.22	0.14	0.49	0.49	0.06	0.60	0.60
Avail Cap(c_a), veh/h	607	0	0	581	697	591	690	2106	779	1119	1269	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	45.6	0.0	0.0	47.6	43.4	44.4	21.8	22.2	22.3	13.3	10.2	10.2
Incr Delay (d2), s/veh	1.0	0.0	0.0	2.4	0.1	0.6	0.1	0.8	2.2	0.0	1.5	2.7
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	2.2	0.0	0.0	3.7	0.2	1.0	1.6	6.2	7.3	0.3	3.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	0.0	0.0	50.0	43.5	45.0	21.9	23.1	24.5	13.3	11.7	13.0
LnGrp LOS	D	A	A	D	D	D	C	C	C	B	B	B
Approach Vol, veh/h		81			176			1512			1251	
Approach Delay, s/veh		46.6			48.7			23.3			12.2	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.6	53.0		17.4	46.6	46.0		17.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	48.0		41.0	14.0	41.0		41.0				
Max Q Clear Time (g_c+I1), s	2.8	19.0		7.3	5.8	13.4		11.9				
Green Ext Time (p_c), s	0.0	11.1		0.5	0.1	8.5		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			C									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	75	226	273	45	66	301	1199	151	76	1086	155
Future Volume (veh/h)	216	75	226	273	45	66	301	1199	151	76	1086	155
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	225	78	235	284	47	0	314	1249	157	79	1131	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	254	215	353	119		372	1591	199	564	3158	
Arrive On Green	0.17	0.14	0.14	0.10	0.06	0.00	0.11	0.27	0.27	0.32	0.49	0.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5834	730	1781	6696	0
Grp Volume(v), veh/h	225	78	235	284	47	0	314	1032	374	79	1131	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1609	1739	1781	1609	0
Q Serve(g_s), s	13.1	4.1	11.7	8.8	2.7	0.0	9.8	21.8	21.9	3.5	11.9	0.0
Cycle Q Clear(g_c), s	13.1	4.1	11.7	8.8	2.7	0.0	9.8	21.8	21.9	3.5	11.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.00
Lane Grp Cap(c), veh/h	311	254	215	353	119		372	1316	474	564	3158	
V/C Ratio(X)	0.72	0.31	1.09	0.80	0.39		0.84	0.78	0.79	0.14	0.36	
Avail Cap(c_a), veh/h	311	680	576	471	646		377	1316	474	564	3158	
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	42.9	29.0	48.3	49.5	0.0	48.2	37.0	37.1	26.9	17.3	0.0
Incr Delay (d2), s/veh	8.1	0.7	56.6	7.3	2.1	0.0	15.8	4.7	12.5	0.1	0.3	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	6.5	2.0	7.9	4.2	1.3	0.0	5.0	8.8	10.6	1.5	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	43.5	85.5	55.6	51.6	0.0	64.0	41.7	49.6	27.0	17.6	0.0
LnGrp LOS	D	D	F	E	D		E	D	D	C	B	
Approach Vol, veh/h		538			331	A		1720			1210	A
Approach Delay, s/veh		65.0			55.1			47.5			18.2	
Approach LOS		E			E			D			B	

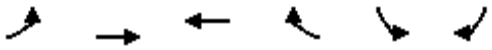
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.8	35.0	15.2	19.9	15.8	59.0	23.2	12.0
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	* 30	15.0	40.0	12.0	25.0	17.0	38.0
Max Q Clear Time (g_c+I1), s	5.5	23.9	10.8	13.7	11.8	13.9	15.1	4.7
Green Ext Time (p_c), s	0.0	4.1	0.4	1.3	0.0	5.5	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Notes

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

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

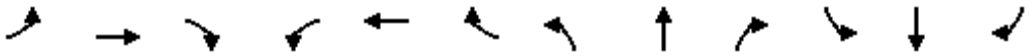


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	75	1188	961	136	0	204
Future Volume (vph)	75	1188	961	136	0	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	4.0	5.0	5.0		5.0
Lane Util. Factor	1.00	0.91	0.91	1.00		1.00
Frt	1.00	1.00	1.00	0.85		0.86
Flt Protected	0.95	1.00	1.00	1.00		1.00
Satd. Flow (prot)	1770	5085	5085	1583		1611
Flt Permitted	0.95	1.00	1.00	1.00		1.00
Satd. Flow (perm)	1770	5085	5085	1583		1611
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	77	1225	991	140	0	210
RTOR Reduction (vph)	0	0	0	45	0	181
Lane Group Flow (vph)	77	1225	991	95	0	29
Turn Type	Prot	NA	NA	Perm		Perm
Protected Phases	7	Free	8			
Permitted Phases				8		6
Actuated Green, G (s)	5.6	110.0	74.4	74.4		15.0
Effective Green, g (s)	5.6	110.0	74.4	74.4		15.0
Actuated g/C Ratio	0.05	1.00	0.68	0.68		0.14
Clearance Time (s)	5.0		5.0	5.0		5.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	90	5085	3439	1070		219
v/s Ratio Prot	c0.04	0.24	c0.19			
v/s Ratio Perm				0.06		0.02
v/c Ratio	0.86	0.24	0.29	0.09		0.13
Uniform Delay, d1	51.8	0.0	7.2	6.1		41.8
Progression Factor	0.66	1.00	0.65	1.14		1.00
Incremental Delay, d2	47.0	0.1	0.2	0.1		1.2
Delay (s)	81.2	0.1	4.8	7.2		43.0
Level of Service	F	A	A	A		D
Approach Delay (s)		4.9	5.1		43.0	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	806	30	61	780	112	124	134	125	101	56	146
Future Volume (vph)	210	806	30	61	780	112	124	134	125	101	56	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	225		0	80		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.995			0.981			0.928			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3472	0	1770	1729	0	1770	3157	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3472	0	1770	1729	0	1770	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			15			39			151	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		647			586			521			537	
Travel Time (s)		11.0			10.0			8.9			9.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	216	831	31	63	804	115	128	138	129	104	58	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	862	0	63	919	0	128	267	0	104	209	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												



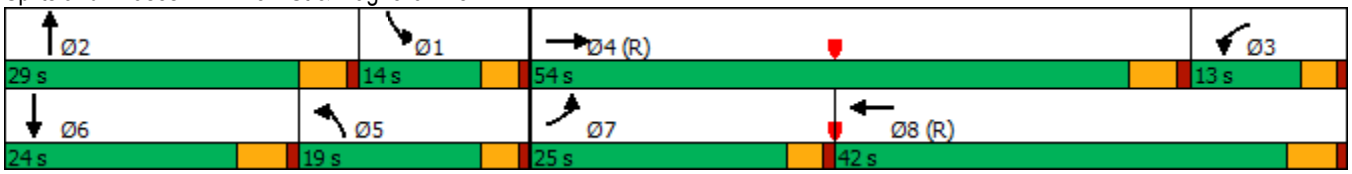
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		11.0	12.0		11.0	23.0	
Total Split (s)	25.0	54.0		13.0	42.0		19.0	29.0		14.0	24.0	
Total Split (%)	22.7%	49.1%		11.8%	38.2%		17.3%	26.4%		12.7%	21.8%	
Maximum Green (s)	21.0	49.0		9.0	37.0		15.0	24.0		10.0	19.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
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	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Walk Time (s)		7.0			7.0						7.0	
Flash Dont Walk (s)		14.0			14.0						11.0	
Pedestrian Calls (#/hr)		5			5						5	
Act Effct Green (s)	17.7	52.1		8.6	40.8		14.5	24.0		9.5	19.0	
Actuated g/C Ratio	0.16	0.47		0.08	0.37		0.13	0.22		0.09	0.17	
v/c Ratio	0.76	0.52		0.46	0.71		0.55	0.66		0.68	0.31	
Control Delay	61.1	22.3		31.2	9.1		54.1	42.0		71.5	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.1	22.3		31.2	9.1		54.1	42.0		71.5	13.9	
LOS	E	C		C	A		D	D		E	B	
Approach Delay		30.1			10.5			45.9			33.0	
Approach LOS		C			B			D			C	
Queue Length 50th (ft)	146	228		41	37		85	148		72	18	
Queue Length 95th (ft)	224	289		76	57		148	240		#147	52	
Internal Link Dist (ft)		567			506			441			457	
Turn Bay Length (ft)	195			225			80			100		
Base Capacity (vph)	337	1670		144	1297		241	407		160	670	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.52		0.44	0.71		0.53	0.66		0.65	0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 72 (65%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 25.7		Intersection LOS: C	
Intersection Capacity Utilization 72.3%		ICU Level of Service C	
Analysis Period (min) 15			

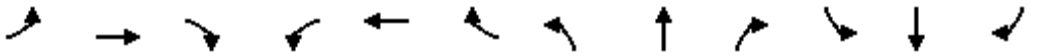
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Polk St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1005	39	91	845	8	46	0	76	0	0	9
Future Volume (vph)	22	1005	39	91	845	8	46	0	76	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	215		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5055	0	1770	3536	0	1770	1863	1583	1863	1863	1583
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5055	0	1770	3536	0	1410	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1				332			321
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		357			547			306			241	
Travel Time (s)		6.1			9.3			8.3			6.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	23	1069	41	97	899	9	49	0	81	0	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	1110	0	97	908	0	49	0	81	0	0	10
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6

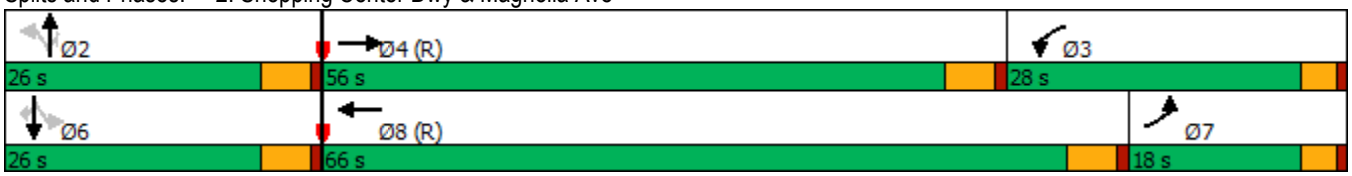


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	23.0		11.0	19.0		12.0	12.0	12.0	23.0	23.0	23.0
Total Split (s)	18.0	56.0		28.0	66.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	16.4%	50.9%		25.5%	60.0%		23.6%	23.6%	23.6%	23.6%	23.6%	23.6%
Maximum Green (s)	14.0	51.0		24.0	61.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0			7.0					7.0	7.0	7.0
Flash Dont Walk (s)		11.0			7.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		5			5					5	5	5
Act Effct Green (s)	7.5	51.0		12.9	63.0		32.1		32.1			32.1
Actuated g/C Ratio	0.07	0.46		0.12	0.57		0.29		0.29			0.29
v/c Ratio	0.19	0.47		0.47	0.45		0.12		0.12			0.01
Control Delay	55.5	8.0		51.5	3.3		32.2		0.3			0.0
Queue Delay	0.0	0.0		0.0	0.1		0.0		0.0			0.0
Total Delay	55.5	8.0		51.5	3.5		32.2		0.3			0.0
LOS	E	A		D	A		C		A			A
Approach Delay		9.0			8.1			12.3				
Approach LOS		A			A			B				
Queue Length 50th (ft)	17	75		74	23		25		0			0
Queue Length 95th (ft)	m33	88		129	32		61		0			0
Internal Link Dist (ft)		277			467			226			161	
Turn Bay Length (ft)	225			215								
Base Capacity (vph)	225	2347		386	2024		411		696			689
Starvation Cap Reductn	0	0		0	321		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	0.10	0.47		0.25	0.53		0.12		0.12			0.01

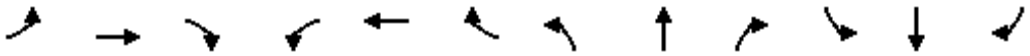
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 59 (54%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 2: Shopping Center Dwy & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1038	46	269	884	13	46	13	85	11	2	23
Future Volume (vph)	45	1038	46	269	884	13	46	13	85	11	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	155		0	140		0	50		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850		0.869			0.862	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5055	0	1770	3539	1583	1770	1619	0	1770	1606	0
Flt Permitted	0.950			0.950			0.740			0.692		
Satd. Flow (perm)	1770	5055	0	1770	3539	1583	1378	1619	0	1289	1606	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				69		88			24	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		547			546			332			305	
Travel Time (s)		9.3			9.3			9.1			8.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	1070	47	277	911	13	47	13	88	11	2	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	1117	0	277	911	13	47	101	0	11	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	36.0	36.0		36.0	36.0	
Total Split (s)	13.0	48.0		25.0	60.0	60.0	37.0	37.0		37.0	37.0	
Total Split (%)	11.8%	43.6%		22.7%	54.5%	54.5%	33.6%	33.6%		33.6%	33.6%	
Maximum Green (s)	9.0	43.0		21.0	55.0	55.0	32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		11.0			11.0	11.0				24.0	24.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	8.6	44.2		19.8	57.6	57.6	32.0	32.0		32.0	32.0	
Actuated g/C Ratio	0.08	0.40		0.18	0.52	0.52	0.29	0.29		0.29	0.29	
v/c Ratio	0.33	0.55		0.87	0.49	0.02	0.12	0.19		0.03	0.05	
Control Delay	35.9	7.6		61.4	26.4	1.5	29.8	9.0		28.4	11.8	
Queue Delay	0.0	0.0		0.0	0.4	0.0	0.0	0.0		0.0	0.0	
Total Delay	35.9	7.6		61.4	26.8	1.5	29.8	9.0		28.4	11.8	
LOS	D	A		E	C	A	C	A		C	B	
Approach Delay		8.7			34.5			15.6			16.7	
Approach LOS		A			C			B			B	
Queue Length 50th (ft)	32	186		198	317	0	24	7		6	1	
Queue Length 95th (ft)	m69	203		#334	380	m2	54	47		20	22	
Internal Link Dist (ft)		467			466			252			225	
Turn Bay Length (ft)	155			140			50			100		
Base Capacity (vph)	144	2033		337	1853	862	400	533		374	484	
Starvation Cap Reductn	0	0		0	432	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.55		0.82	0.64	0.02	0.12	0.19		0.03	0.05	

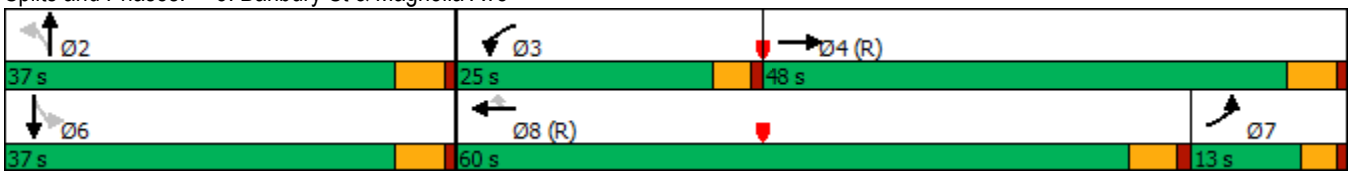
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 21.4		Intersection LOS: C	
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			

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

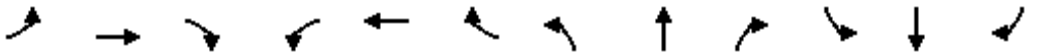
Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Banbury St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	692	295	279	583	160	327	735	328	231	648	177
Future Volume (vph)	183	692	295	279	583	160	327	735	328	231	648	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		100	150		0	245		0	170		160
Storage Lanes	2		1	2		0	2		1	2		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850		0.968				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	4923	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	4923	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		68				99			119
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		704			440			651			1448	
Travel Time (s)		12.0			7.5			11.1			24.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	187	706	301	285	595	163	334	750	335	236	661	181
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	706	301	285	758	0	334	750	335	236	661	181
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	5	3	8		5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	43.0	11.0	11.0	43.0		11.0	40.0	11.0	11.0	43.0	11.0
Total Split (s)	12.0	43.0	12.0	12.0	43.0		12.0	41.0	12.0	14.0	43.0	12.0
Total Split (%)	10.9%	39.1%	10.9%	10.9%	39.1%		10.9%	37.3%	10.9%	12.7%	39.1%	10.9%
Maximum Green (s)	8.0	38.0	8.0	8.0	38.0		8.0	36.0	8.0	10.0	38.0	8.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
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	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		31.0			31.0			28.0			31.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effct Green (s)	10.0	41.8	65.7	8.0	39.8		18.9	32.3	41.3	9.9	23.3	34.3
Actuated g/C Ratio	0.09	0.38	0.60	0.07	0.36		0.17	0.29	0.38	0.09	0.21	0.31
v/c Ratio	0.60	0.37	0.30	1.14	0.42		0.57	0.50	0.51	0.76	0.61	0.31
Control Delay	37.2	9.9	0.9	133.5	7.7		37.9	23.4	9.6	52.6	34.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	9.9	0.9	133.5	7.7		37.9	23.4	9.6	52.6	34.2	9.0
LOS	D	A	A	F	A		D	C	A	D	C	A
Approach Delay		11.9			42.1			23.6			34.0	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)	35	69	0	~123	34		114	173	44	86	170	54
Queue Length 95th (ft)	#112	165	0	#211	42		#241	109	86	#143	192	94
Internal Link Dist (ft)		624			360			571			1368	
Turn Bay Length (ft)	130		100	150			245			170		160
Base Capacity (vph)	313	1932	990	249	1823		591	1664	655	312	1756	575
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.37	0.30	1.14	0.42		0.57	0.45	0.51	0.76	0.38	0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 13 (12%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 27.1		Intersection LOS: C	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

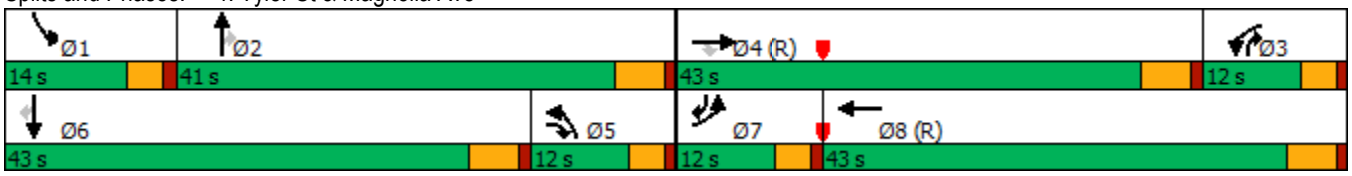
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

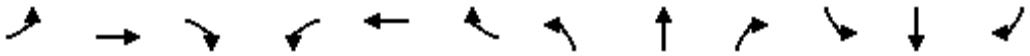
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4: Tyler St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	948	205	50	858	41	93	8	70	62	16	97
Future Volume (vph)	112	948	205	50	858	41	93	8	70	62	16	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		175	125		0	0		75	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.925	
Flt Protected	0.950			0.950			0.950				0.983	
Satd. Flow (prot)	1770	5085	1583	1770	5050	0	1770	1863	1583	0	1694	0
Flt Permitted	0.950			0.950			0.477				0.880	
Satd. Flow (perm)	1770	5085	1583	1770	5050	0	889	1863	1583	0	1516	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			225		7				109		61	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		440			380			353			241	
Travel Time (s)		7.5			6.5			9.6			6.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	123	1042	225	55	943	45	102	9	77	68	18	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1042	225	55	988	0	102	9	77	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		

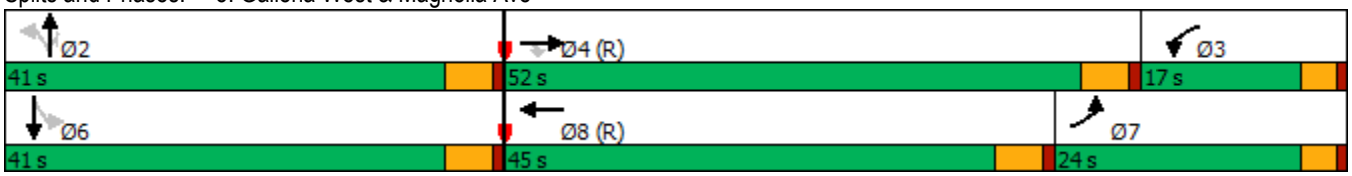


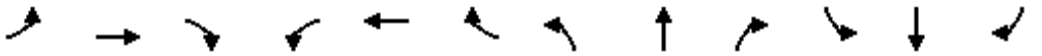
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	30.0	30.0	11.0	23.0		36.0	36.0	36.0	12.0	12.0	
Total Split (s)	24.0	52.0	52.0	17.0	45.0		41.0	41.0	41.0	41.0	41.0	
Total Split (%)	21.8%	47.3%	47.3%	15.5%	40.9%		37.3%	37.3%	37.3%	37.3%	37.3%	
Maximum Green (s)	20.0	47.0	47.0	13.0	40.0		36.0	36.0	36.0	36.0	36.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	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)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		18.0	18.0		11.0		24.0	24.0	24.0			
Pedestrian Calls (#/hr)		5	5		5		5	5	5			
Act Effct Green (s)	14.9	72.0	72.0	9.1	64.0		17.1	17.1	17.1		17.1	
Actuated g/C Ratio	0.14	0.65	0.65	0.08	0.58		0.16	0.16	0.16		0.16	
v/c Ratio	0.51	0.31	0.20	0.38	0.34		0.74	0.03	0.23		0.67	
Control Delay	47.9	10.1	2.9	49.1	0.9		71.6	33.9	4.0		39.7	
Queue Delay	0.0	0.1	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	47.9	10.2	2.9	49.1	0.9		71.6	33.9	4.0		39.7	
LOS	D	B	A	D	A		E	C	A		D	
Approach Delay		12.3			3.4			42.1			39.7	
Approach LOS		B			A			D			D	
Queue Length 50th (ft)	76	100	8	41	4		71	6	0		90	
Queue Length 95th (ft)	m124	134	m16	86	6		112	17	18		142	
Internal Link Dist (ft)		360			300			273			161	
Turn Bay Length (ft)	80		175	125					75			
Base Capacity (vph)	321	3328	1114	209	2941		290	609	591		537	
Starvation Cap Reductn	0	927	0	0	118		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.38	0.43	0.20	0.26	0.35		0.35	0.01	0.13		0.36	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 52.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Galleria West & Magnolia Ave



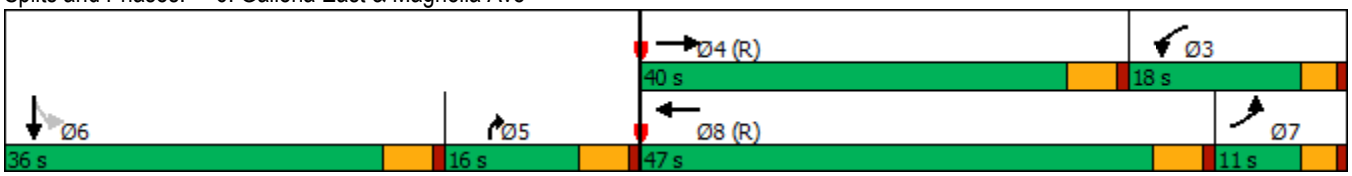


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1020	41	104	947	22	0	0	122	20	0	35
Future Volume (vph)	31	1020	41	104	947	22	0	0	122	20	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		165	130		0	0		0	0		0
Storage Lanes	1		1	1		0	0		2	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850		0.997				0.850		0.914	
Flt Protected	0.950			0.950							0.982	
Satd. Flow (prot)	1770	5085	1583	1770	5070	0	0	0	2787	0	1672	0
Flt Permitted	0.950			0.950							0.982	
Satd. Flow (perm)	1770	5085	1583	1770	5070	0	0	0	2787	0	1672	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			208		3						159	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		380			506			335			173	
Travel Time (s)		6.5			8.6			9.1			4.7	
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
Adj. Flow (vph)	33	1074	43	109	997	23	0	0	128	21	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1074	43	109	1020	0	0	0	128	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2				1	1	2	
Detector Template	Left	Thru	Right	Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100				20	20	100	
Trailing Detector (ft)	0	0	0	0	0				0	0	0	
Detector 1 Position(ft)	0	0	0	0	0				0	0	0	
Detector 1 Size(ft)	20	6	20	20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot	NA	Free	Prot	NA				Prot	Perm	NA	
Protected Phases	7	4		3	8				5		6	
Permitted Phases			Free							6		

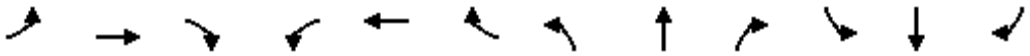
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8				5	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	19.0				12.0	36.0	36.0	
Total Split (s)	11.0	40.0		18.0	47.0				16.0	36.0	36.0	
Total Split (%)	10.0%	36.4%		16.4%	42.7%				14.5%	32.7%	32.7%	
Maximum Green (s)	7.0	35.0		14.0	42.0				11.0	31.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0				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	
Total Lost Time (s)	4.0	5.0		4.0	5.0				5.0		5.0	
Lead/Lag	Lag	Lead		Lag	Lead				Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max				None	Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		11.0			7.0					24.0	24.0	
Pedestrian Calls (#/hr)		5			5					5	5	
Act Effct Green (s)	7.0	36.3	110.0	11.9	45.6				9.7		33.1	
Actuated g/C Ratio	0.06	0.33	1.00	0.11	0.41				0.09		0.30	
v/c Ratio	0.29	0.64	0.03	0.57	0.49				0.52		0.09	
Control Delay	44.7	15.6	0.0	46.4	7.6				55.4		0.3	
Queue Delay	0.0	0.3	0.0	0.0	0.0				0.0		0.0	
Total Delay	44.7	15.9	0.0	46.4	7.6				55.4		0.3	
LOS	D	B	A	D	A				E		A	
Approach Delay		16.2			11.3			55.4			0.3	
Approach LOS		B			B			E			A	
Queue Length 50th (ft)	25	161	0	82	40				49		0	
Queue Length 95th (ft)	57	72	0	141	47				83		0	
Internal Link Dist (ft)		300			426			255			93	
Turn Bay Length (ft)	100		165	130								
Base Capacity (vph)	112	1675	1583	225	2102				278		614	
Starvation Cap Reductn	0	163	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	0.29	0.71	0.03	0.48	0.49				0.46		0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 1 (1%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Galleria East & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1047	33	173	878	427	55	80	123	549	117	63
Future Volume (vph)	66	1047	33	173	878	427	55	80	123	549	117	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		110	0		0	100		0
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	0.91	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.995				0.850		0.909			0.947	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5060	0	3433	5085	1583	1770	1693	0	3433	1764	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5060	0	3433	5085	1583	1770	1693	0	3433	1764	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				335		59			26	
Link Speed (mph)		40			45			40			40	
Link Distance (ft)		506			714			431			1963	
Travel Time (s)		8.6			10.8			7.3			33.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	70	1114	35	184	934	454	59	85	131	584	124	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1149	0	184	934	454	59	216	0	584	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	33.0	33.0	12.0	12.0		40.0	40.0	
Total Split (s)	11.0	36.0		13.0	38.0	38.0	21.0	21.0		40.0	40.0	
Total Split (%)	10.0%	32.7%		11.8%	34.5%	34.5%	19.1%	19.1%		36.4%	36.4%	
Maximum Green (s)	7.0	31.0		9.0	33.0	33.0	16.0	16.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		None	None	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		14.0			21.0	21.0				28.0	28.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	7.0	38.8		10.1	44.1	44.1	16.0	16.0		26.1	26.1	
Actuated g/C Ratio	0.06	0.35		0.09	0.40	0.40	0.15	0.15		0.24	0.24	
v/c Ratio	0.32	0.64		0.58	0.46	0.54	0.23	0.73		0.72	0.44	
Control Delay	23.6	4.6		55.7	26.8	10.6	44.2	47.9		23.9	14.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	23.6	4.6		55.7	26.8	10.6	44.2	47.9		23.9	14.6	
LOS	C	A		E	C	B	D	D		C	B	
Approach Delay		5.7			25.5			47.1			21.6	
Approach LOS		A			C			D			C	
Queue Length 50th (ft)	26	36		64	179	55	37	107		105	32	
Queue Length 95th (ft)	m34	110		#104	253	178	77	#213		110	57	
Internal Link Dist (ft)		426			634			351			1883	
Turn Bay Length (ft)	125			150		110				100		
Base Capacity (vph)	218	1786		321	2039	835	257	296		1092	579	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.64		0.57	0.46	0.54	0.23	0.73		0.53	0.33	

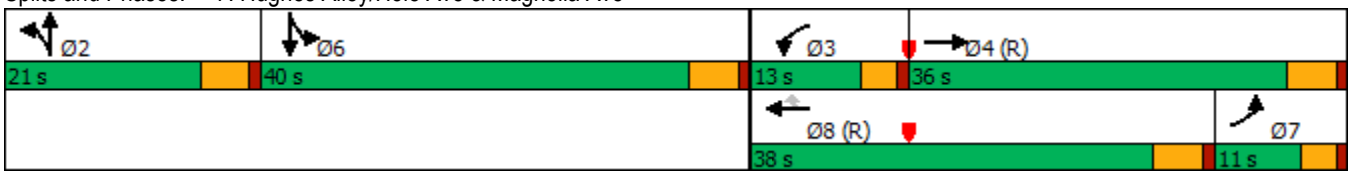
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 20.0		Intersection LOS: B	
Intersection Capacity Utilization 70.0%		ICU Level of Service C	
Analysis Period (min) 15			

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

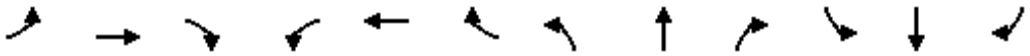
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Hughes Alley/Hole Ave & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	370	253	158	419	225	314	581	103	145	585	67
Future Volume (vph)	91	370	253	158	419	225	314	581	103	145	585	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	130		130	130		0	100		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	0.91
Frt			0.850			0.850			0.850		0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5009	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5009	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			269			142			159		17	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		702			1963			1448			757	
Travel Time (s)		12.0			33.5			24.7			12.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	97	394	269	168	446	239	334	618	110	154	622	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	394	269	168	446	239	334	618	110	154	693	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			

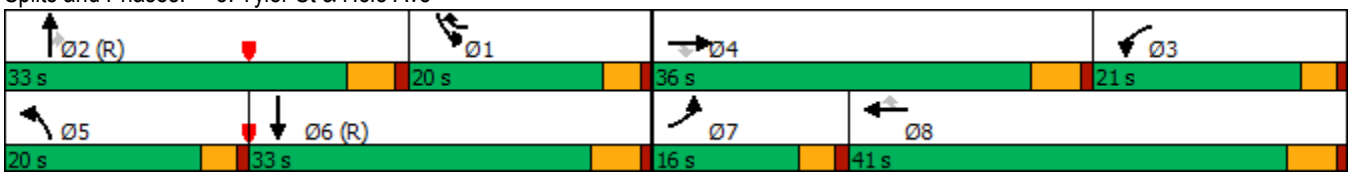


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	36.0	36.0	11.0	33.0	11.0	11.0	33.0	33.0	11.0	33.0	
Total Split (s)	16.0	36.0	36.0	21.0	41.0	20.0	20.0	33.0	33.0	20.0	33.0	
Total Split (%)	14.5%	32.7%	32.7%	19.1%	37.3%	18.2%	18.2%	30.0%	30.0%	18.2%	30.0%	
Maximum Green (s)	12.0	31.0	31.0	17.0	36.0	16.0	16.0	28.0	28.0	16.0	28.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
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	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		24.0	24.0		21.0			21.0	21.0		21.0	
Pedestrian Calls (#/hr)		5	5		5			5	5		5	
Act Effct Green (s)	10.4	20.1	20.1	14.8	24.5	41.5	15.1	41.2	41.2	16.0	42.1	
Actuated g/C Ratio	0.09	0.18	0.18	0.13	0.22	0.38	0.14	0.37	0.37	0.15	0.38	
v/c Ratio	0.58	0.61	0.53	0.71	0.57	0.35	0.71	0.47	0.16	0.60	0.36	
Control Delay	61.7	44.7	8.0	56.6	35.8	4.1	45.9	16.5	2.0	54.6	26.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.7	44.7	8.0	56.6	35.8	4.1	45.9	16.5	2.0	54.6	26.4	
LOS	E	D	A	E	D	A	D	B	A	D	C	
Approach Delay		33.9			31.0			24.2			31.6	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	66	138	0	112	135	18	51	41	0	103	123	
Queue Length 95th (ft)	121	163	61	m187	173	m34	146	255	m23	173	192	
Internal Link Dist (ft)		622			1883			1368			677	
Turn Bay Length (ft)	100		100	130		130	130			100		
Base Capacity (vph)	193	997	639	276	1158	685	509	1324	691	257	1926	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.50	0.40	0.42	0.61	0.39	0.35	0.66	0.47	0.16	0.60	0.36	

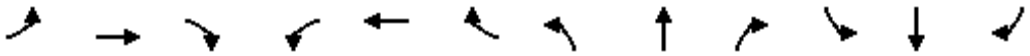
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 19 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 58.1%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 8: Tyler St & Hole Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	10	27	127	6	38	93	1275	99	69	1116	28
Future Volume (vph)	42	10	27	127	6	38	93	1275	99	69	1116	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		115	215		0	170		0
Storage Lanes	0		0	1		1	1		0	2		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.91	0.91
Frt		0.953				0.850		0.989			0.996	
Flt Protected		0.974		0.950			0.950			0.950		
Satd. Flow (prot)	0	1729	0	1770	1863	1583	1770	6337	0	3433	5065	0
Flt Permitted		0.847		0.716			0.950			0.950		
Satd. Flow (perm)	0	1504	0	1334	1863	1583	1770	6337	0	3433	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				109		19			4	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		221			241			548			651	
Travel Time (s)		6.0			6.6			9.3			11.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	43	10	28	131	6	39	96	1314	102	71	1151	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	131	6	39	96	1416	0	71	1180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						

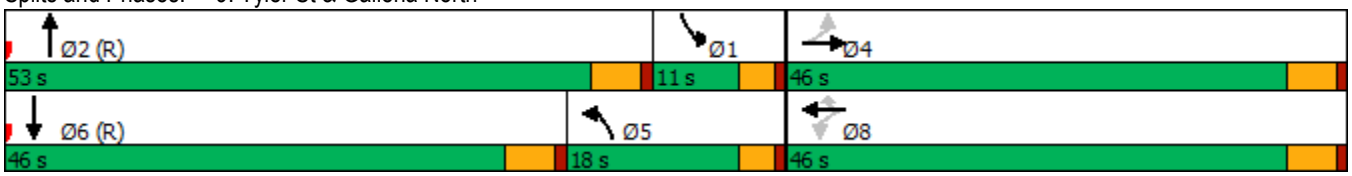


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	40.0	40.0		43.0	43.0	43.0	11.0	30.0		11.0	23.0	
Total Split (s)	46.0	46.0		46.0	46.0	46.0	18.0	53.0		11.0	46.0	
Total Split (%)	41.8%	41.8%		41.8%	41.8%	41.8%	16.4%	48.2%		10.0%	41.8%	
Maximum Green (s)	41.0	41.0		41.0	41.0	41.0	14.0	48.0		7.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
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	
Total Lost Time (s)		5.0		5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag							Lag	Lead		Lag	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	28.0	28.0		31.0	31.0	31.0		18.0			11.0	
Pedestrian Calls (#/hr)	5	5		5	5	5		5			5	
Act Effct Green (s)		19.1		19.1	19.1	19.1	12.6	72.1		7.0	66.5	
Actuated g/C Ratio		0.17		0.17	0.17	0.17	0.11	0.66		0.06	0.60	
v/c Ratio		0.29		0.57	0.02	0.11	0.48	0.34		0.33	0.39	
Control Delay		26.1		48.9	30.5	0.6	43.5	1.5		49.4	6.7	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		26.1		48.9	30.5	0.6	43.5	1.5		49.4	6.7	
LOS		C		D	C	A	D	A		D	A	
Approach Delay		26.1			37.5			4.2			9.1	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)		34		89	4	0	71	12		25	64	
Queue Length 95th (ft)		60		118	12	0	m125	13		m42	m110	
Internal Link Dist (ft)		141			161			468			571	
Turn Bay Length (ft)						115	215			170		
Base Capacity (vph)		578		497	694	658	225	4160		218	3063	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.14		0.26	0.01	0.06	0.43	0.34		0.33	0.39	

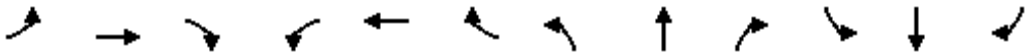
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 58 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 8.7		Intersection LOS: A	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 9: Tyler St & Galleria North



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	75	226	273	45	66	301	1199	151	76	1086	155
Future Volume (vph)	216	75	226	273	45	66	301	1199	151	76	1086	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		50	240		0	155		0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.86	0.86	1.00	0.86	0.86
Frt			0.850			0.850		0.983			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	3433	6299	0	1770	6286	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	3433	6299	0	1770	6286	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235			149		28			30	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		267			252			595			487	
Travel Time (s)		7.3			6.9			10.1			8.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	225	78	235	284	47	69	314	1249	157	79	1131	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	78	235	284	47	69	314	1406	0	79	1292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						



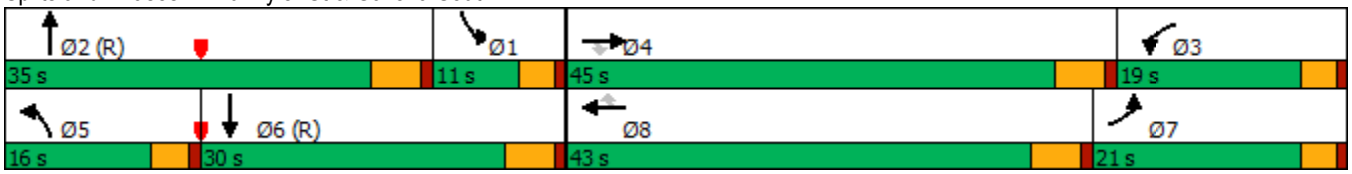
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	12.0	12.0	11.0	43.0	43.0	11.0	26.0		11.0	30.0	
Total Split (s)	21.0	45.0	45.0	19.0	43.0	43.0	16.0	35.0		11.0	30.0	
Total Split (%)	19.1%	40.9%	40.9%	17.3%	39.1%	39.1%	14.5%	31.8%		10.0%	27.3%	
Maximum Green (s)	17.0	40.0	40.0	15.0	38.0	38.0	12.0	30.0		7.0	25.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	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	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)					7.0	7.0		7.0			7.0	
Flash Dont Walk (s)					31.0	31.0		14.0			18.0	
Pedestrian Calls (#/hr)					5	5		5			5	
Act Effct Green (s)	20.0	10.5	10.5	21.0	13.9	13.9	14.3	55.7		7.0	46.2	
Actuated g/C Ratio	0.18	0.10	0.10	0.19	0.13	0.13	0.13	0.51		0.06	0.42	
v/c Ratio	0.70	0.44	0.65	0.43	0.20	0.21	0.70	0.44		0.71	0.49	
Control Delay	55.5	53.8	14.6	39.6	40.5	1.4	55.3	20.5		57.6	8.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	55.5	53.8	14.6	39.6	40.5	1.4	55.3	20.5		57.6	8.2	
LOS	E	D	B	D	D	A	E	C		E	A	
Approach Delay		37.4			33.2			26.8			11.1	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	150	53	0	94	32	0	108	169		50	38	
Queue Length 95th (ft)	#283	97	71	104	49	0	#186	309		#127	#161	
Internal Link Dist (ft)		187			172			515			407	
Turn Bay Length (ft)				150		50	240			155		
Base Capacity (vph)	321	677	725	683	643	644	447	3203		112	2657	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.70	0.12	0.32	0.42	0.07	0.11	0.70	0.44		0.71	0.49	

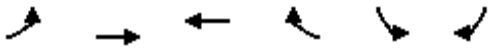
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

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

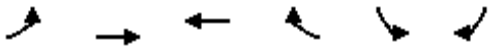
Queue shown is maximum after two cycles.

Splits and Phases: 10: Tyler St & Galleria South





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	75	1188	961	136	0	204
Future Volume (vph)	75	1188	961	136	0	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00
Frt				0.850		0.865
Flt Protected	0.950					
Satd. Flow (prot)	1770	5085	5085	1583	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1770	5085	5085	1583	0	1611
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				140		235
Link Speed (mph)		40	40		25	
Link Distance (ft)		546	704		334	
Travel Time (s)		9.3	12.0		9.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	77	1225	991	140	0	210
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	1225	991	140	0	210
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	24		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2	1		1
Detector Template	Left	Thru	Thru	Right		Right
Leading Detector (ft)	20	100	100	20		20
Trailing Detector (ft)	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0		0
Detector 1 Size(ft)	20	6	6	20		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Prot	NA	NA	Perm		Perm
Protected Phases	7	Free	8			
Permitted Phases				8		6
Detector Phase	7		8	8		6
Switch Phase						
Minimum Initial (s)	7.0		7.0	7.0		7.0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Minimum Split (s)	12.0		19.0	19.0		12.0
Total Split (s)	12.0		78.0	78.0		20.0
Total Split (%)	10.9%		70.9%	70.9%		18.2%
Maximum Green (s)	7.0		73.0	73.0		15.0
Yellow Time (s)	4.0		4.0	4.0		4.0
All-Red Time (s)	1.0		1.0	1.0		1.0
Lost Time Adjust (s)	0.0		0.0	0.0		0.0
Total Lost Time (s)	5.0		5.0	5.0		5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Recall Mode	None		C-Max	C-Max		Max
Walk Time (s)			7.0	7.0		
Flash Dont Walk (s)			7.0	7.0		
Pedestrian Calls (#/hr)			5	5		
Act Effct Green (s)	7.0	110.0	75.4	75.4		15.0
Actuated g/C Ratio	0.06	1.00	0.69	0.69		0.14
v/c Ratio	0.69	0.24	0.28	0.12		0.50
Control Delay	62.2	0.1	4.8	1.5		8.3
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	62.2	0.1	4.8	1.5		8.3
LOS	E	A	A	A		A
Approach Delay		3.8	4.4		8.3	
Approach LOS		A	A		A	
Queue Length 50th (ft)	39	0	95	10		0
Queue Length 95th (ft)	m#118	0	28	0		49
Internal Link Dist (ft)		466	624		254	
Turn Bay Length (ft)						
Base Capacity (vph)	112	5085	3485	1129		422
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	0.69	0.24	0.28	0.12		0.50

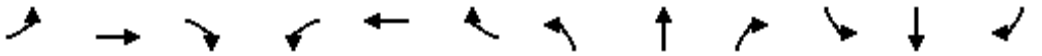
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 8:WBT, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 4.4		Intersection LOS: A	
Intersection Capacity Utilization 39.5%		ICU Level of Service A	
Analysis Period (min) 15			

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.

Splits and Phases: 11: Magnolia Ave & Project Dwy

APPENDIX B-III

ALTERNATIVE 2 – FULL ACCESS SIGNAL
EXISTING PLUS PROJECT TRAFFIC CONDITIONS



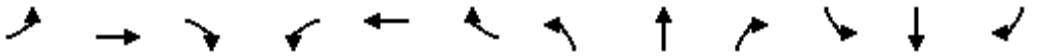
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	478	137	82	439	48	36	44	40	77	106	197
Future Volume (veh/h)	100	478	137	82	439	48	36	44	40	77	106	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	106	509	146	87	467	51	38	47	43	82	113	210
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	1017	290	343	1614	176	78	164	150	143	388	346
Arrive On Green	0.08	0.37	0.37	0.19	0.50	0.50	0.04	0.18	0.18	0.08	0.22	0.22
Sat Flow, veh/h	1781	2729	779	1781	3232	352	1781	899	823	1781	1777	1585
Grp Volume(v), veh/h	106	331	324	87	256	262	38	0	90	82	113	210
Grp Sat Flow(s),veh/h/ln	1781	1777	1730	1781	1777	1807	1781	0	1722	1781	1777	1585
Q Serve(g_s), s	6.4	15.8	15.9	4.6	9.3	9.3	2.3	0.0	5.0	4.9	5.8	13.1
Cycle Q Clear(g_c), s	6.4	15.8	15.9	4.6	9.3	9.3	2.3	0.0	5.0	4.9	5.8	13.1
Prop In Lane	1.00		0.45	1.00		0.19	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	134	662	645	343	887	902	78	0	313	143	388	346
V/C Ratio(X)	0.79	0.50	0.50	0.25	0.29	0.29	0.49	0.00	0.29	0.57	0.29	0.61
Avail Cap(c_a), veh/h	308	662	645	343	887	902	162	0	313	227	388	346
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.0	26.6	26.6	37.7	16.1	16.1	51.4	0.0	38.8	48.8	35.9	38.8
Incr Delay (d2), s/veh	10.0	2.7	2.8	0.4	0.8	0.8	4.7	0.0	2.3	3.6	1.9	7.7
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	3.2	6.9	6.8	2.0	3.8	3.9	1.1	0.0	2.3	2.3	2.7	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.1	29.3	29.4	38.1	16.9	16.9	56.1	0.0	41.2	52.4	37.8	46.5
LnGrp LOS	E	C	C	D	B	B	E	A	D	D	D	D
Approach Vol, veh/h		761			605			128			405	
Approach Delay, s/veh		33.6			20.0			45.6			45.3	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	25.0	26.2	46.0	8.8	29.0	12.3	59.9
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	14.0	20.0	17.0	* 41	10.0	24.0	19.0	39.0
Max Q Clear Time (g_c+I1), s	6.9	7.0	6.6	17.9	4.3	15.1	8.4	11.3
Green Ext Time (p_c), s	0.1	0.3	0.1	3.9	0.0	1.2	0.2	3.0

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

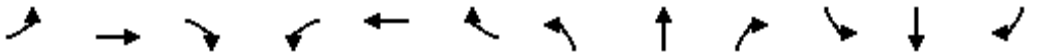
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	594	23	71	552	4	7	0	12	0	0	1
Future Volume (veh/h)	15	594	23	71	552	4	7	0	12	0	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	653	25	78	607	4	8	0	13	0	0	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	2202	84	437	1974	13	336	357	303	65	357	303
Arrive On Green	0.14	0.44	0.44	0.49	1.00	1.00	0.19	0.00	0.19	0.00	0.00	0.19
Sat Flow, veh/h	1781	5047	193	1781	3619	24	1416	1870	1585	1401	1870	1585
Grp Volume(v), veh/h	16	440	238	78	298	313	8	0	13	0	0	1
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1777	1866	1416	1870	1585	1401	1870	1585
Q Serve(g_s), s	0.9	9.2	9.3	2.7	0.0	0.0	0.5	0.0	0.7	0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.9	9.2	9.3	2.7	0.0	0.0	0.5	0.0	0.7	0.0	0.0	0.1
Prop In Lane	1.00		0.10	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1485	801	437	969	1018	336	357	303	65	357	303
V/C Ratio(X)	0.07	0.30	0.30	0.18	0.31	0.31	0.02	0.00	0.04	0.00	0.00	0.00
Avail Cap(c_a), veh/h	243	1485	801	437	969	1018	336	357	303	65	357	303
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	41.4	20.1	20.1	21.8	0.0	0.0	36.2	0.0	36.3	0.0	0.0	36.0
Incr Delay (d2), s/veh	0.1	0.5	0.9	0.2	0.8	0.7	0.1	0.0	0.3	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	0.4	3.6	4.0	1.1	0.2	0.2	0.2	0.0	0.3	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	20.6	21.0	22.0	0.8	0.7	36.3	0.0	36.6	0.0	0.0	36.0
LnGrp LOS	D	C	C	C	A	A	D	A	D	A	A	D
Approach Vol, veh/h		694			689			21			1	
Approach Delay, s/veh		21.2			3.2			36.5			36.0	
Approach LOS		C			A			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		26.0	31.0	53.0		26.0	19.0	65.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		21.0	27.0	48.0		21.0	15.0	60.0				
Max Q Clear Time (g_c+I1), s		2.7	4.7	11.3		2.1	2.9	2.0				
Green Ext Time (p_c), s		0.0	0.2	4.5		0.0	0.0	3.8				

Intersection Summary												
HCM 6th Ctrl Delay			12.6									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	567	37	54	560	0	39	1	83	0	0	2
Future Volume (veh/h)	27	567	37	54	560	0	39	1	83	0	0	2
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	644	42	61	636	0	44	1	94	0	0	2
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	178	2409	156	96	1551	692	527	5	514	65	0	519
Arrive On Green	0.20	0.98	0.98	0.02	0.14	0.00	0.33	0.33	0.33	0.00	0.00	0.33
Sat Flow, veh/h	1781	4900	318	1781	3554	1585	1415	17	1571	1301	0	1585
Grp Volume(v), veh/h	31	446	240	61	636	0	44	0	95	0	0	2
Grp Sat Flow(s),veh/h/ln	1781	1702	1813	1781	1777	1585	1415	0	1588	1301	0	1585
Q Serve(g_s), s	1.6	0.3	0.3	3.7	17.9	0.0	2.4	0.0	4.7	0.0	0.0	0.1
Cycle Q Clear(g_c), s	1.6	0.3	0.3	3.7	17.9	0.0	2.5	0.0	4.7	0.0	0.0	0.1
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.99	1.00		1.00
Lane Grp Cap(c), veh/h	178	1674	892	96	1551	692	527	0	520	65	0	519
V/C Ratio(X)	0.17	0.27	0.27	0.64	0.41	0.00	0.08	0.00	0.18	0.00	0.00	0.00
Avail Cap(c_a), veh/h	194	1674	892	275	1551	692	527	0	520	65	0	519
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.98	0.98	0.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	0.5	0.5	53.0	34.2	0.0	25.8	0.0	26.5	0.0	0.0	24.9
Incr Delay (d2), s/veh	0.4	0.4	0.7	6.7	0.8	0.0	0.3	0.0	0.8	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	0.7	0.2	0.3	1.9	8.6	0.0	0.9	0.0	1.9	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.7	0.8	1.2	59.7	35.0	0.0	26.1	0.0	27.2	0.0	0.0	24.9
LnGrp LOS	D	A	A	E	C	A	C	A	C	A	A	C
Approach Vol, veh/h		717			697			139			2	
Approach Delay, s/veh		2.7			37.1			26.9			24.9	
Approach LOS		A			D			C			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	41.0	9.9	59.1	41.0	16.0	53.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	5.0	* 5
Max Green Setting (Gmax), s	36.0	17.0	43.0	36.0	12.0	* 48
Max Q Clear Time (g_c+I1), s	6.7	5.7	2.3	2.1	3.6	19.9
Green Ext Time (p_c), s	0.7	0.1	4.6	0.0	0.0	4.3

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

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

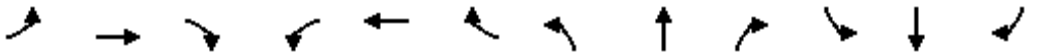
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	440	120	116	320	37	220	621	208	30	497	121
Future Volume (veh/h)	130	440	120	116	320	37	220	621	208	30	497	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	137	463	126	122	337	39	232	654	219	32	523	127
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, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	217	1764	677	838	2486	282	283	973	686	137	805	349
Arrive On Green	0.13	0.69	0.69	0.08	0.18	0.18	0.03	0.06	0.06	0.01	0.05	0.05
Sat Flow, veh/h	3456	5106	1585	3456	4652	527	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	137	463	126	122	245	131	232	654	219	32	523	127
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1775	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	4.1	3.8	1.0	3.6	6.7	6.9	7.3	13.8	0.0	1.0	11.1	7.9
Cycle Q Clear(g_c), s	4.1	3.8	1.0	3.6	6.7	6.9	7.3	13.8	0.0	1.0	11.1	7.9
Prop In Lane	1.00		1.00	1.00		0.30	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	217	1764	677	838	1819	949	283	973	686	137	805	349
V/C Ratio(X)	0.63	0.26	0.19	0.15	0.13	0.14	0.82	0.67	0.32	0.23	0.65	0.36
Avail Cap(c_a), veh/h	220	1764	677	838	1819	949	283	1857	961	220	1764	647
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	0.99	0.99	0.99	0.97	0.97	0.97
Uniform Delay (d), s/veh	46.9	11.7	3.4	40.0	23.8	23.9	52.7	48.2	24.4	52.6	49.2	41.1
Incr Delay (d2), s/veh	5.5	0.4	0.6	0.1	0.2	0.3	17.1	0.8	0.3	0.8	0.9	0.6
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	1.8	1.3	0.4	1.5	2.7	3.0	3.9	6.3	4.3	0.4	5.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.4	12.1	3.9	40.1	24.0	24.2	69.8	49.0	24.6	53.5	50.0	41.7
LnGrp LOS	D	B	A	D	C	C	E	D	C	D	D	D
Approach Vol, veh/h		726			498			1105			682	
Approach Delay, s/veh		18.3			28.0			48.5			48.6	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	26.0	31.7	43.0	13.0	22.3	10.9	63.8
Change Period (Y+Rc), s	5.0	* 5	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	* 40	7.0	* 38	9.0	38.0	7.0	38.0
Max Q Clear Time (g_c+I1), s	3.0	15.8	5.6	5.8	9.3	13.1	6.1	8.9
Green Ext Time (p_c), s	0.0	5.2	0.0	3.6	0.0	3.9	0.0	2.3

Intersection Summary	
HCM 6th Ctrl Delay	37.9
HCM 6th LOS	D

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	604	37	21	507	13	1	1	9	7	0	5
Future Volume (veh/h)	25	604	37	21	507	13	1	1	9	7	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	623	38	22	523	13	1	1	9	7	0	5
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	2275	706	688	4129	102	113	60	51	75	5	20
Arrive On Green	0.07	0.89	0.89	0.77	1.00	1.00	0.03	0.03	0.03	0.03	0.00	0.03
Sat Flow, veh/h	1781	5106	1585	1781	5125	127	1411	1870	1585	726	158	632
Grp Volume(v), veh/h	26	623	38	22	347	189	1	1	9	12	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1848	1411	1870	1585	1516	0	0
Q Serve(g_s), s	1.5	1.9	0.3	0.3	0.0	0.0	0.0	0.1	0.6	0.2	0.0	0.0
Cycle Q Clear(g_c), s	1.5	1.9	0.3	0.3	0.0	0.0	0.1	0.1	0.6	0.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	0.58		0.42
Lane Grp Cap(c), veh/h	62	2275	706	688	2743	1489	113	60	51	101	0	0
V/C Ratio(X)	0.42	0.27	0.05	0.03	0.13	0.13	0.01	0.02	0.18	0.12	0.00	0.00
Avail Cap(c_a), veh/h	259	2275	706	688	2743	1489	466	527	447	469	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.1	3.4	3.3	7.7	0.0	0.0	51.6	51.6	51.8	51.9	0.0	0.0
Incr Delay (d2), s/veh	4.3	0.3	0.1	0.0	0.1	0.2	0.0	0.1	1.6	0.5	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	0.7	0.6	0.1	0.1	0.0	0.1	0.0	0.0	0.3	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	3.7	3.5	7.7	0.1	0.2	51.6	51.7	53.5	52.4	0.0	0.0
LnGrp LOS	D	A	A	A	A	A	D	D	D	D	A	A
Approach Vol, veh/h		687			558			11			12	
Approach Delay, s/veh		5.6			0.4			53.1			52.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.5	47.5	54.0	8.5	7.8	93.6
Change Period (Y+Rc), s	5.0	5.0	* 5	5.0	4.0	5.0
Max Green Setting (Gmax), s	31.0	16.0	* 49	31.0	16.0	49.0
Max Q Clear Time (g_c+I1), s	2.6	2.3	3.9	2.8	3.5	2.0
Green Ext Time (p_c), s	0.0	0.0	4.7	0.0	0.0	3.5

Intersection Summary	
HCM 6th Ctrl Delay	4.2
HCM 6th LOS	A

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	615	3	17	535	16	0	0	8	3	0	4
Future Volume (veh/h)	6	615	3	17	535	16	0	0	8	3	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		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	1870	1870	1870	1870	1870	1870	0	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	6	628	0	17	546	16	0	0	8	3	0	4
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	0	0	2	2	2	2
Cap, veh/h	405	1718		453	1854	54	0	0	0	0	0	0
Arrive On Green	0.45	0.67	0.00	0.51	0.73	0.73	0.00	0.00	0.00	0.28	0.00	0.28
Sat Flow, veh/h	1781	5106	1585	1781	5099	149		0		0	0	0
Grp Volume(v), veh/h	6	628	0	17	364	198		0.0		7	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1844				0	0	0
Q Serve(g_s), s	0.2	5.9	0.0	0.5	4.1	4.1				0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	5.9	0.0	0.5	4.1	4.1				0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.08				0.43		0.57
Lane Grp Cap(c), veh/h	405	1718		453	1238	670				0	0	0
V/C Ratio(X)	0.01	0.37		0.04	0.29	0.30				0.00	0.00	0.00
Avail Cap(c_a), veh/h	405	1718		453	1238	670				0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.00	0.99	0.99	0.99				1.00	0.00	0.00
Uniform Delay (d), s/veh	23.2	12.9	0.0	20.3	10.1	10.1				28.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.6	1.1				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
%ile BackOfQ(50%),veh/ln	0.1	2.0	0.0	0.2	1.4	1.6				0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	13.5	0.0	20.3	10.7	11.2				28.4	0.0	0.0
LnGrp LOS	C	B		C	B	B				C	A	A
Approach Vol, veh/h		634	A		579						7	
Approach Delay, s/veh		13.6			11.2						28.4	
Approach LOS		B			B						C	

Timer - Assigned Phs		3	4		6	7	8					
Phs Duration (G+Y+Rc), s		32.0	42.0		36.0	29.0	45.0					
Change Period (Y+Rc), s		4.0	5.0		5.0	4.0	5.0					
Max Green Setting (Gmax), s		13.0	37.0		31.0	10.0	40.0					
Max Q Clear Time (g_c+I1), s		2.5	7.9		2.0	2.2	6.1					
Green Ext Time (p_c), s		0.0	4.3		0.0	0.0	3.6					

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

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

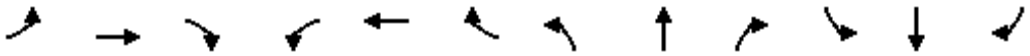
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	634	9	24	483	281	7	13	13	233	11	11
Future Volume (veh/h)	29	634	9	24	483	281	7	13	13	233	11	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	31	674	10	26	514	299	7	14	14	248	12	12
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1012	3176	47	121	1764	548	146	70	70	338	84	84
Arrive On Green	0.59	1.00	1.00	0.03	0.35	0.35	0.08	0.08	0.08	0.03	0.03	0.03
Sat Flow, veh/h	3456	5184	77	3456	5106	1585	1781	858	858	3456	858	858
Grp Volume(v), veh/h	31	442	242	26	514	299	7	0	28	248	0	24
Grp Sat Flow(s),veh/h/ln	1728	1702	1857	1728	1702	1585	1781	0	1716	1728	0	1716
Q Serve(g_s), s	0.4	0.0	0.0	0.8	8.1	16.7	0.4	0.0	1.7	7.8	0.0	1.5
Cycle Q Clear(g_c), s	0.4	0.0	0.0	0.8	8.1	16.7	0.4	0.0	1.7	7.8	0.0	1.5
Prop In Lane	1.00		0.04	1.00		1.00	1.00		0.50	1.00		0.50
Lane Grp Cap(c), veh/h	1012	2085	1137	121	1764	548	146	0	140	338	0	168
V/C Ratio(X)	0.03	0.21	0.21	0.22	0.29	0.55	0.05	0.00	0.20	0.73	0.00	0.14
Avail Cap(c_a), veh/h	1012	2085	1137	220	1764	548	146	0	140	1162	0	577
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00	0.94	0.00	0.94
Uniform Delay (d), s/veh	16.2	0.0	0.0	51.6	26.2	29.0	46.6	0.0	47.1	51.8	0.0	48.7
Incr Delay (d2), s/veh	0.0	0.2	0.4	0.9	0.4	3.9	0.6	0.0	3.2	2.9	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.1	0.1	0.4	3.2	6.6	0.2	0.0	0.8	3.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	0.2	0.4	52.5	26.6	32.9	47.2	0.0	50.3	54.7	0.0	49.1
LnGrp LOS	B	A	A	D	C	C	D	A	D	D	A	D
Approach Vol, veh/h		715			839			35			272	
Approach Delay, s/veh		1.0			29.7			49.7			54.2	
Approach LOS		A			C			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	14.0	7.8	72.4	15.8	37.2	43.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	5.0	* 5
Max Green Setting (Gmax), s	9.0	7.0	38.0	37.0	7.0	* 38
Max Q Clear Time (g_c+I1), s	3.7	2.8	2.0	9.8	2.4	18.7
Green Ext Time (p_c), s	0.0	0.0	4.5	1.0	0.0	4.1

Intersection Summary	
HCM 6th Ctrl Delay	22.6
HCM 6th LOS	C

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	247	194	25	142	74	185	430	174	67	440	31
Future Volume (veh/h)	33	247	194	25	142	74	185	430	174	67	440	31
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	257	202	26	148	77	193	448	0	70	458	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	383	171	62	361	250	1266	2266		100	1625	
Arrive On Green	0.04	0.11	0.11	0.01	0.03	0.03	0.37	0.64	0.00	0.06	0.32	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	1781	5274	0
Grp Volume(v), veh/h	34	257	202	26	148	77	193	448	0	70	458	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1781	1702	0
Q Serve(g_s), s	2.1	7.7	5.8	1.6	4.5	4.9	4.1	5.8	0.0	4.2	7.4	0.0
Cycle Q Clear(g_c), s	2.1	7.7	5.8	1.6	4.5	4.9	4.1	5.8	0.0	4.2	7.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	73	383	171	62	361	250	1266	2266		100	1625	
V/C Ratio(X)	0.46	0.67	1.18	0.42	0.41	0.31	0.15	0.20		0.70	0.28	
Avail Cap(c_a), veh/h	146	1131	504	146	1131	593	1266	2266		194	1625	
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	0.97	0.97	0.97	0.84	0.84	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.6	47.2	11.7	53.3	49.9	44.2	23.4	8.3	0.0	51.0	28.1	0.0
Incr Delay (d2), s/veh	4.5	2.0	94.8	4.3	0.7	0.7	0.0	0.2	0.0	8.5	0.4	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	1.0	3.4	8.8	0.8	2.0	2.0	1.6	2.0	0.0	2.1	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.1	49.2	106.5	57.6	50.7	44.9	23.4	8.4	0.0	59.5	28.5	0.0
LnGrp LOS	E	D	F	E	D	D	C	A		E	C	
Approach Vol, veh/h		493			251			641	A		528	A
Approach Delay, s/veh		73.2			49.6			12.9			32.6	
Approach LOS		E			D			B			C	

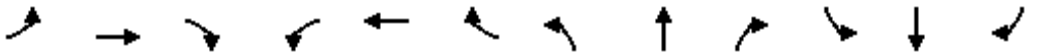
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	75.1	7.8	16.9	45.3	40.0	8.5	16.2
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	12.0	36.0	9.0	35.0	13.0	* 35	9.0	35.0
Max Q Clear Time (g_c+I1), s	6.2	7.8	3.6	9.7	6.1	9.4	4.1	6.9
Green Ext Time (p_c), s	0.1	2.9	0.0	2.2	0.3	3.0	0.0	1.1

Intersection Summary	
HCM 6th Ctrl Delay	38.7
HCM 6th LOS	D

Notes

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

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



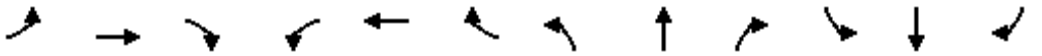
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	2	5	24	3	8	46	1035	48	10	734	3
Future Volume (veh/h)	5	2	5	24	3	8	46	1035	48	10	734	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	2	5	25	3	8	47	1067	49	10	757	3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	27	33	137	92	78	771	5127	235	58	2004	8
Arrive On Green	0.05	0.05	0.05	0.05	0.05	0.05	0.43	0.81	0.81	0.03	0.76	0.76
Sat Flow, veh/h	387	558	675	1409	1870	1585	1781	6353	291	3456	5250	21
Grp Volume(v), veh/h	12	0	0	25	3	8	47	809	307	10	491	269
Grp Sat Flow(s),veh/h/ln	1620	0	0	1409	1870	1585	1781	1609	1818	1728	1702	1867
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.2	0.5	1.7	4.3	4.3	0.3	5.3	5.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	1.7	0.2	0.5	1.7	4.3	4.3	0.3	5.3	5.3
Prop In Lane	0.42		0.42	1.00		1.00	1.00		0.16	1.00		0.01
Lane Grp Cap(c), veh/h	126	0	0	137	92	78	771	3894	1467	58	1300	713
V/C Ratio(X)	0.10	0.00	0.00	0.18	0.03	0.10	0.06	0.21	0.21	0.17	0.38	0.38
Avail Cap(c_a), veh/h	597	0	0	567	663	562	771	3894	1467	346	1300	713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	0.88
Uniform Delay (d), s/veh	50.1	0.0	0.0	50.5	49.8	50.0	18.2	2.5	2.5	52.4	8.7	8.7
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.6	0.1	0.6	0.0	0.1	0.3	1.2	0.7	1.3
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	0.3	0.0	0.0	0.7	0.1	0.2	0.7	0.9	1.1	0.1	1.7	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	0.0	51.1	50.0	50.6	18.2	2.6	2.8	53.6	9.4	10.0
LnGrp LOS	D	A	A	D	D	D	B	A	A	D	A	B
Approach Vol, veh/h		12			36			1163			770	
Approach Delay, s/veh		50.4			50.9			3.3			10.2	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	93.8		10.4	52.6	47.0		10.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	5.0	* 5		5.0				
Max Green Setting (Gmax), s	11.0	46.0		39.0	15.0	* 42		39.0				
Max Q Clear Time (g_c+I1), s	2.3	6.3		2.7	3.7	7.3		3.7				
Green Ext Time (p_c), s	0.0	8.7		0.0	0.0	5.1		0.1				

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.



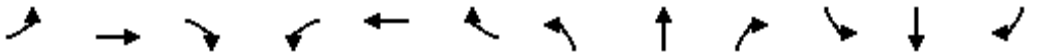
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	3	20	35	4	6	426	1130	20	15	685	38
Future Volume (veh/h)	33	3	20	35	4	6	426	1130	20	15	685	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	3	21	36	4	0	439	1165	21	15	706	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	101	86	147	102		1740	2384	43	670	1521	
Arrive On Green	0.04	0.05	0.05	0.04	0.05	0.00	0.50	0.36	0.36	0.38	0.24	0.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	6557	118	1781	6696	0
Grp Volume(v), veh/h	34	3	21	36	4	0	439	857	329	15	706	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1609	1849	1781	1609	0
Q Serve(g_s), s	2.1	0.2	1.4	1.1	0.2	0.0	7.9	15.1	15.1	0.6	10.4	0.0
Cycle Q Clear(g_c), s	2.1	0.2	1.4	1.1	0.2	0.0	7.9	15.1	15.1	0.6	10.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	75	101	86	147	102		1740	1755	672	670	1521	
V/C Ratio(X)	0.46	0.03	0.25	0.25	0.04		0.25	0.49	0.49	0.02	0.46	
Avail Cap(c_a), veh/h	113	646	548	220	646		1740	1755	672	670	1521	
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	49.3	49.9	51.0	49.3	0.0	15.5	27.1	27.1	21.6	36.0	0.0
Incr Delay (d2), s/veh	4.3	0.1	1.5	0.9	0.2	0.0	0.1	1.0	2.5	0.0	1.0	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	1.0	0.1	0.6	0.5	0.1	0.0	3.0	5.8	6.9	0.2	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	55.8	49.4	51.3	51.8	49.4	0.0	15.6	28.1	29.6	21.6	37.0	0.0
LnGrp LOS	E	D	D	D	D		B	C	C	C	D	
Approach Vol, veh/h		58			40	A		1625			721	A
Approach Delay, s/veh		53.8			51.6			25.0			36.7	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.4	45.0	8.7	10.9	59.4	31.0	8.6	11.0
Change Period (Y+Rc), s	4.0	5.0	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	40.0	7.0	38.0	21.0	26.0	7.0	38.0
Max Q Clear Time (g_c+I1), s	2.6	17.1	3.1	3.4	9.9	12.4	4.1	2.2
Green Ext Time (p_c), s	0.0	8.1	0.0	0.1	1.2	3.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	29.6
HCM 6th LOS	C

Notes

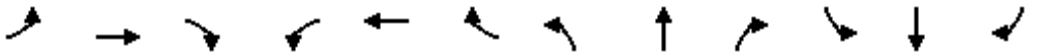
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	617	10	10	585	76	10	0	10	43	0	28
Future Volume (veh/h)	31	617	10	10	585	76	10	0	10	43	0	28
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	701	11	11	665	86	11	0	11	49	0	32
Peak Hour Factor	0.88	0.88	0.92	0.92	0.88	0.88	0.92	0.92	0.92	0.88	0.92	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	428	2636	41	354	2599	807	333	16	299	398	13	234
Arrive On Green	0.17	0.17	0.17	1.00	1.00	1.00	0.40	0.00	0.40	0.40	0.00	0.40
Sat Flow, veh/h	712	5179	81	738	5106	1585	710	39	749	863	31	584
Grp Volume(v), veh/h	35	460	252	11	665	86	22	0	0	81	0	0
Grp Sat Flow(s),veh/h/ln	712	1702	1856	738	1702	1585	1497	0	0	1478	0	0
Q Serve(g_s), s	4.6	13.0	13.0	0.4	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0
Cycle Q Clear(g_c), s	4.6	13.0	13.0	13.4	0.0	0.0	0.9	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		0.04	1.00		1.00	0.50		0.50	0.60		0.40
Lane Grp Cap(c), veh/h	428	1733	945	354	2599	807	648	0	0	644	0	0
V/C Ratio(X)	0.08	0.27	0.27	0.03	0.26	0.11	0.03	0.00	0.00	0.13	0.00	0.00
Avail Cap(c_a), veh/h	428	1733	945	354	2599	807	648	0	0	644	0	0
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.93	0.93	0.93	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.4	27.9	27.9	1.6	0.0	0.0	20.1	0.0	0.0	20.8	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.4	0.7	0.2	0.2	0.2	0.0	0.0	0.0	0.4	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	0.8	5.9	6.6	0.0	0.1	0.1	0.3	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	28.2	28.5	1.7	0.2	0.2	20.1	0.0	0.0	21.2	0.0	0.0
LnGrp LOS	C	C	C	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		747			762			22			81	
Approach Delay, s/veh		28.2			0.2			20.1			21.2	
Approach LOS		C			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		49.0		61.0		49.0		61.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		44.0		56.0		44.0		56.0				
Max Q Clear Time (g_c+I1), s		2.9		15.0		5.6		15.4				
Green Ext Time (p_c), s		0.1		5.2		0.5		5.3				

Intersection Summary												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									

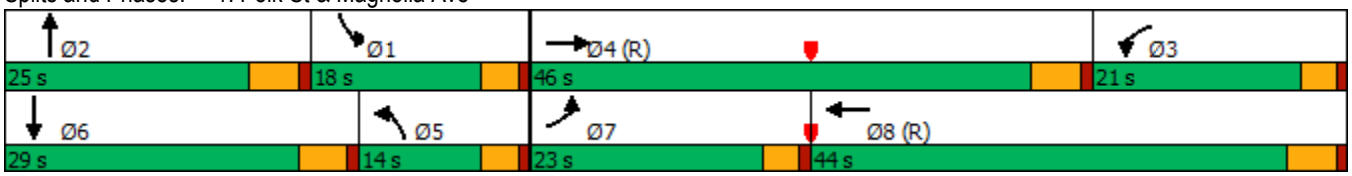


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	478	137	82	439	48	36	44	40	77	106	197
Future Volume (vph)	100	478	137	82	439	48	36	44	40	77	106	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	225		0	80		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.967			0.985			0.928			0.902	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3422	0	1770	3486	0	1770	1729	0	1770	3192	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3422	0	1770	3486	0	1770	1729	0	1770	3192	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			12			37			210	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		647			586			521			537	
Travel Time (s)		11.0			10.0			8.9			9.2	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	106	509	146	87	467	51	38	47	43	82	113	210
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	655	0	87	518	0	38	90	0	82	323	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												

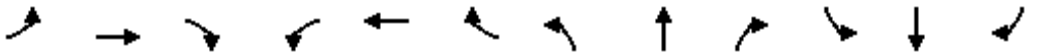
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		11.0	12.0		11.0	23.0	
Total Split (s)	23.0	46.0		21.0	44.0		14.0	25.0		18.0	29.0	
Total Split (%)	20.9%	41.8%		19.1%	40.0%		12.7%	22.7%		16.4%	26.4%	
Maximum Green (s)	19.0	41.0		17.0	39.0		10.0	20.0		14.0	24.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
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	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Walk Time (s)		7.0			7.0						7.0	
Flash Dont Walk (s)		14.0			14.0						11.0	
Pedestrian Calls (#/hr)		5			5						5	
Act Effct Green (s)	11.9	49.7		15.0	50.6		8.1	20.8		10.9	25.8	
Actuated g/C Ratio	0.11	0.45		0.14	0.46		0.07	0.19		0.10	0.23	
v/c Ratio	0.55	0.42		0.36	0.32		0.29	0.25		0.47	0.36	
Control Delay	56.9	22.5		24.8	1.0		53.7	26.1		55.0	13.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.9	22.5		24.8	1.0		53.7	26.1		55.0	13.8	
LOS	E	C		C	A		D	C		D	B	
Approach Delay		27.3			4.4			34.3			22.1	
Approach LOS		C			A			C			C	
Queue Length 50th (ft)	72	168		66	0		26	32		55	34	
Queue Length 95th (ft)	124	230		120	0		59	78		102	73	
Internal Link Dist (ft)		567			506			441			457	
Turn Bay Length (ft)	195			225			80			100		
Base Capacity (vph)	305	1567		273	1610		160	356		225	908	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.42		0.32	0.32		0.24	0.25		0.36	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 42 (38%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 1: Polk St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	594	23	71	552	4	7	0	12	0	0	1
Future Volume (vph)	15	594	23	71	552	4	7	0	12	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	215		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5055	0	1770	3536	0	1770	1863	1583	1863	1863	1583
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5055	0	1770	3536	0	1410	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1				447			435
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		357			547			306			241	
Travel Time (s)		6.1			9.3			8.3			6.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	16	653	25	78	607	4	8	0	13	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	678	0	78	611	0	8	0	13	0	0	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6

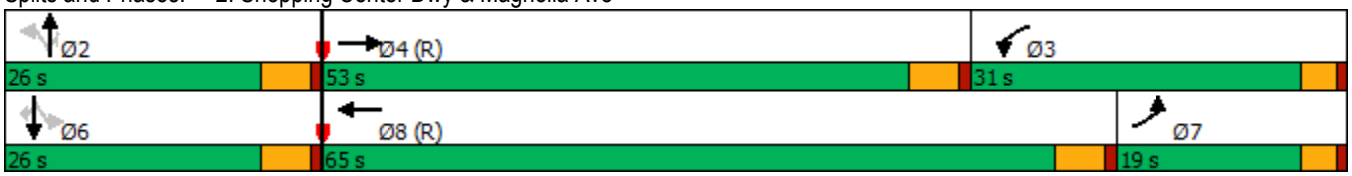


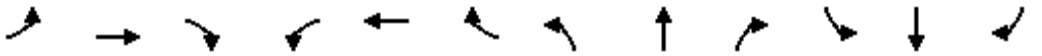
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	12.0	23.0		12.0	19.0		12.0	12.0	12.0	23.0	23.0	23.0
Total Split (s)	19.0	53.0		31.0	65.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	17.3%	48.2%		28.2%	59.1%		23.6%	23.6%	23.6%	23.6%	23.6%	23.6%
Maximum Green (s)	15.0	48.0		27.0	60.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0			7.0					7.0	7.0	7.0
Flash Dont Walk (s)		11.0			7.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		5			5					5	5	5
Act Effct Green (s)	7.3	50.4		13.0	60.6		34.8		34.8			34.8
Actuated g/C Ratio	0.07	0.46		0.12	0.55		0.32		0.32			0.32
v/c Ratio	0.14	0.29		0.37	0.31		0.02		0.02			0.00
Control Delay	49.4	7.0		51.5	4.4		30.0		0.0			0.0
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0			0.0
Total Delay	49.4	7.0		51.5	4.4		30.0		0.0			0.0
LOS	D	A		D	A		C		A			A
Approach Delay		8.0			9.8			11.4				
Approach LOS		A			A			B				
Queue Length 50th (ft)	12	37		60	17		4		0			0
Queue Length 95th (ft)	m30	42		105	21		17		0			0
Internal Link Dist (ft)		277			467			226			161	
Turn Bay Length (ft)	225			215								
Base Capacity (vph)	241	2319		434	1947		445		806			798
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	0.07	0.29		0.18	0.31		0.02		0.02			0.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 22 (20%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 2: Shopping Center Dwy & Magnolia Ave



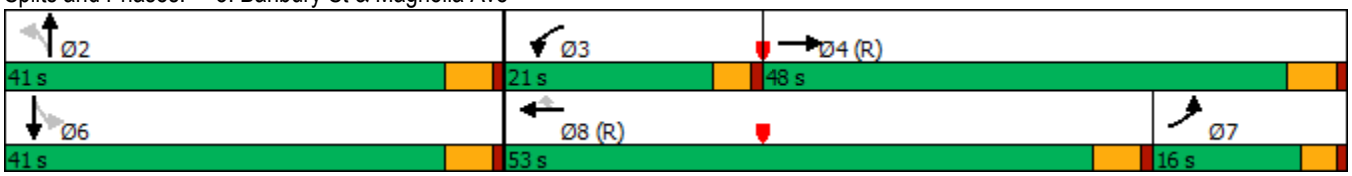


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	567	37	54	560	0	39	1	83	0	0	2
Future Volume (vph)	27	567	37	54	560	0	39	1	83	0	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	155		0	140		0	50		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991						0.852			0.850	
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5040	0	1770	3539	1863	1770	1587	0	1863	1583	0
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5040	0	1770	3539	1863	1410	1587	0	1863	1583	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11						94			347	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		547			546			332			305	
Travel Time (s)		9.3			9.3			9.1			8.3	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	31	644	42	61	636	0	44	1	94	0	0	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	686	0	61	636	0	44	95	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		

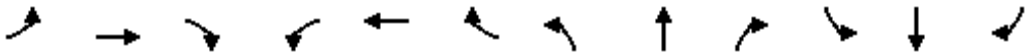
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	36.0	36.0		36.0	36.0	
Total Split (s)	16.0	48.0		21.0	53.0	53.0	41.0	41.0		41.0	41.0	
Total Split (%)	14.5%	43.6%		19.1%	48.2%	48.2%	37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	12.0	43.0		17.0	48.0	48.0	36.0	36.0		36.0	36.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		11.0			11.0	11.0				24.0	24.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	10.0	52.8		9.4	54.4		36.0	36.0			36.0	
Actuated g/C Ratio	0.09	0.48		0.09	0.49		0.33	0.33			0.33	
v/c Ratio	0.19	0.28		0.40	0.36		0.10	0.16			0.00	
Control Delay	24.8	3.7		40.9	36.5		26.6	6.2			0.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Total Delay	24.8	3.7		40.9	36.5		26.6	6.2			0.0	
LOS	C	A		D	D		C	A			A	
Approach Delay		4.6			36.9			12.7				
Approach LOS		A			D			B				
Queue Length 50th (ft)	21	13		44	247		21	1			0	
Queue Length 95th (ft)	45	16		85	295		47	35			0	
Internal Link Dist (ft)		467			466			252			225	
Turn Bay Length (ft)	155			140			50					
Base Capacity (vph)	193	2425		273	1750		461	582			751	
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	0.16	0.28		0.22	0.36		0.10	0.16			0.00	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 32 (29%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 19.8		Intersection LOS: B	
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Banbury St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	440	120	116	320	37	220	621	208	30	497	121
Future Volume (vph)	130	440	120	116	320	37	220	621	208	30	497	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		100	150		0	245		0	170		160
Storage Lanes	2		1	2		0	2		1	2		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850		0.984				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5004	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5004	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126		20				219			127
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		704			440			651			1448	
Travel Time (s)		12.0			7.5			11.1			24.7	
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
Adj. Flow (vph)	137	463	126	122	337	39	232	654	219	32	523	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	463	126	122	376	0	232	654	219	32	523	127
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6



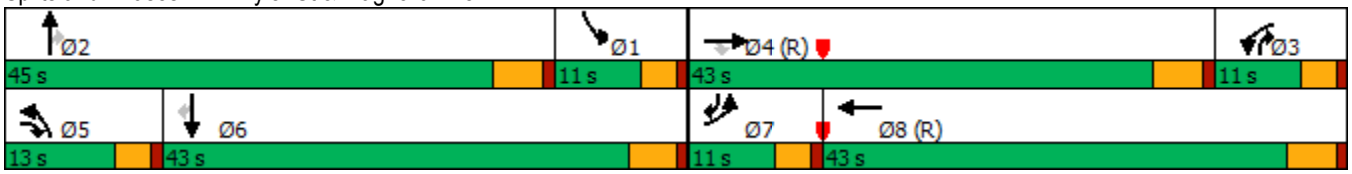
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	5	3	8		5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	43.0	11.0	11.0	43.0		11.0	40.0	11.0	11.0	43.0	11.0
Total Split (s)	11.0	43.0	13.0	11.0	43.0		13.0	45.0	11.0	11.0	43.0	11.0
Total Split (%)	10.0%	39.1%	11.8%	10.0%	39.1%		11.8%	40.9%	10.0%	10.0%	39.1%	10.0%
Maximum Green (s)	7.0	38.0	9.0	7.0	38.0		9.0	40.0	7.0	7.0	38.0	7.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
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	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		31.0			31.0			28.0			31.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effct Green (s)	8.7	54.8	64.8	7.0	53.2		9.0	26.6	38.6	8.0	21.2	34.8
Actuated g/C Ratio	0.08	0.50	0.59	0.06	0.48		0.08	0.24	0.35	0.07	0.19	0.32
v/c Ratio	0.51	0.18	0.13	0.56	0.15		0.83	0.53	0.31	0.13	0.53	0.22
Control Delay	78.2	3.4	0.3	41.3	7.6		74.9	27.6	3.6	35.7	32.1	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.2	3.4	0.3	41.3	7.6		74.9	27.6	3.6	35.7	32.1	2.0
LOS	E	A	A	D	A		E	C	A	D	C	A
Approach Delay		17.0			15.8			32.8			26.6	
Approach LOS		B			B			C			C	
Queue Length 50th (ft)	53	11	0	43	10		85	160	5	10	127	0
Queue Length 95th (ft)	#88	20	1	66	14		#135	28	0	24	65	1
Internal Link Dist (ft)		624			360			571			1368	
Turn Bay Length (ft)	130		100	150			245			170		160
Base Capacity (vph)	270	2535	984	218	2428		280	1849	697	249	1756	588
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.18	0.13	0.56	0.15		0.83	0.35	0.31	0.13	0.30	0.22

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 24.8		Intersection LOS: C	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Tyler St & Magnolia Ave

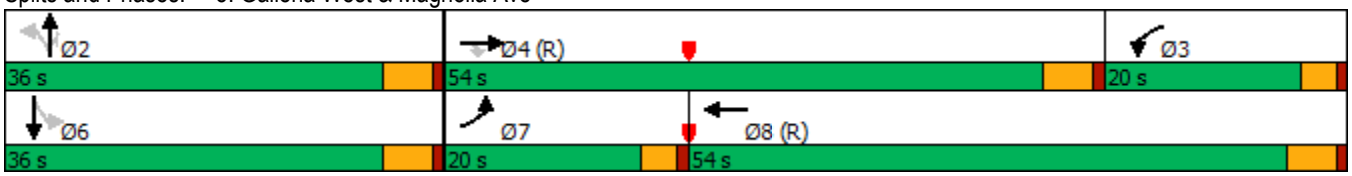


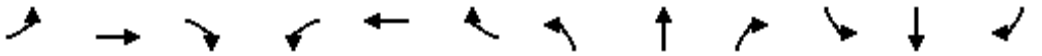
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	604	37	21	507	13	1	1	9	7	0	5
Future Volume (vph)	25	604	37	21	507	13	1	1	9	7	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		175	125		0	0		75	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.944	
Flt Protected	0.950			0.950			0.950				0.972	
Satd. Flow (prot)	1770	5085	1583	1770	5065	0	1770	1863	1583	0	1709	0
Flt Permitted	0.950			0.950			0.750				0.831	
Satd. Flow (perm)	1770	5085	1583	1770	5065	0	1397	1863	1583	0	1461	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69		4				109		109	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		440			380			353			241	
Travel Time (s)		7.5			6.5			9.6			6.6	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	26	623	38	22	523	13	1	1	9	7	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	623	38	22	536	0	1	1	9	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	30.0	30.0	11.0	23.0		36.0	36.0	36.0	12.0	12.0	
Total Split (s)	20.0	54.0	54.0	20.0	54.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	18.2%	49.1%	49.1%	18.2%	49.1%		32.7%	32.7%	32.7%	32.7%	32.7%	
Maximum Green (s)	16.0	49.0	49.0	16.0	49.0		31.0	31.0	31.0	31.0	31.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	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)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		18.0	18.0		11.0		24.0	24.0	24.0			
Pedestrian Calls (#/hr)		5	5		5		5	5	5			
Act Effct Green (s)	7.6	90.4	90.4	10.6	90.2		11.8	11.8	11.8		11.8	
Actuated g/C Ratio	0.07	0.82	0.82	0.10	0.82		0.11	0.11	0.11		0.11	
v/c Ratio	0.21	0.15	0.03	0.13	0.13		0.01	0.01	0.03		0.05	
Control Delay	55.6	4.0	0.8	25.7	0.5		36.0	36.0	0.2		0.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	55.6	4.0	0.8	25.7	0.5		36.0	36.0	0.2		0.3	
LOS	E	A	A	C	A		D	D	A		A	
Approach Delay		5.8			1.5			6.7			0.3	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	19	0	0	15	0		1	1	0		0	
Queue Length 95th (ft)	49	70	4	38	1		5	5	0		0	
Internal Link Dist (ft)		360			300			273			161	
Turn Bay Length (ft)	80		175	125					75			
Base Capacity (vph)	257	4179	1313	257	4152		393	525	524		490	
Starvation Cap Reductn	0	0	0	0	0		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.10	0.15	0.03	0.09	0.13		0.00	0.00	0.02		0.02	

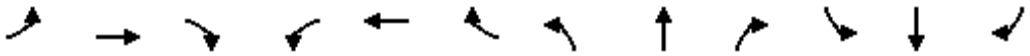
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.21			
Intersection Signal Delay: 3.8		Intersection LOS: A	
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: Galleria West & Magnolia Ave





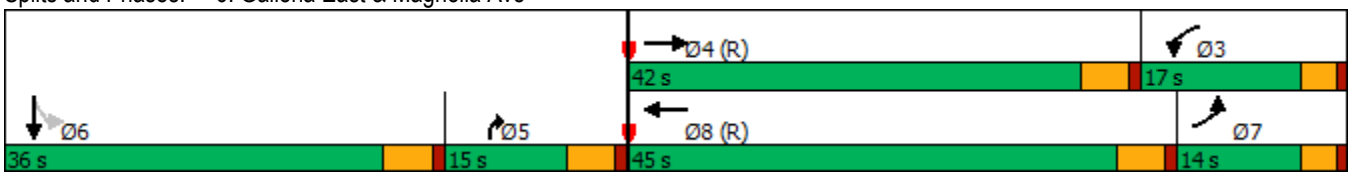
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	615	3	17	535	16	0	0	8	3	0	4
Future Volume (vph)	6	615	3	17	535	16	0	0	8	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		165	130		0	0		0	0		0
Storage Lanes	1		1	1		0	0		2	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850		0.996				0.850		0.923	
Flt Protected	0.950			0.950							0.979	
Satd. Flow (prot)	1770	5085	1583	1770	5065	0	0	0	2787	0	1683	0
Flt Permitted	0.950			0.950							0.979	
Satd. Flow (perm)	1770	5085	1583	1770	5065	0	0	0	2787	0	1683	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			159		4						109	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		380			506			335			173	
Travel Time (s)		6.5			8.6			9.1			4.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	6	628	3	17	546	16	0	0	8	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	628	3	17	562	0	0	0	8	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2				1	1	2	
Detector Template	Left	Thru	Right	Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100				20	20	100	
Trailing Detector (ft)	0	0	0	0	0				0	0	0	
Detector 1 Position(ft)	0	0	0	0	0				0	0	0	
Detector 1 Size(ft)	20	6	20	20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot	NA	Free	Prot	NA				Prot	Perm	NA	
Protected Phases	7	4		3	8				5		6	
Permitted Phases			Free							6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8				5	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	19.0				12.0	36.0	36.0	
Total Split (s)	14.0	42.0		17.0	45.0				15.0	36.0	36.0	
Total Split (%)	12.7%	38.2%		15.5%	40.9%				13.6%	32.7%	32.7%	
Maximum Green (s)	10.0	37.0		13.0	40.0				10.0	31.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0				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	
Total Lost Time (s)	4.0	5.0		4.0	5.0				5.0		5.0	
Lead/Lag	Lag	Lead		Lag	Lead				Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max				None	Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		11.0			7.0					24.0	24.0	
Pedestrian Calls (#/hr)		5			5					5	5	
Act Effct Green (s)	7.0	51.4	110.0	7.6	54.2				7.0		41.2	
Actuated g/C Ratio	0.06	0.47	1.00	0.07	0.49				0.06		0.37	
v/c Ratio	0.05	0.26	0.00	0.14	0.22				0.05		0.01	
Control Delay	39.8	6.8	0.0	37.4	6.3				49.0		0.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0				0.0		0.0	
Total Delay	39.8	6.8	0.0	37.4	6.3				49.0		0.0	
LOS	D	A	A	D	A				D		A	
Approach Delay		7.1			7.2			49.0				
Approach LOS		A			A			D				
Queue Length 50th (ft)	4	55	0	11	19				2		0	
Queue Length 95th (ft)	19	82	0	35	26				12		0	
Internal Link Dist (ft)		300			426			255			93	
Turn Bay Length (ft)	100		165	130								
Base Capacity (vph)	160	2376	1583	209	2499				253		697	
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	0.04	0.26	0.00	0.08	0.22				0.03		0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 77 (70%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.26			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Galleria East & Magnolia Ave

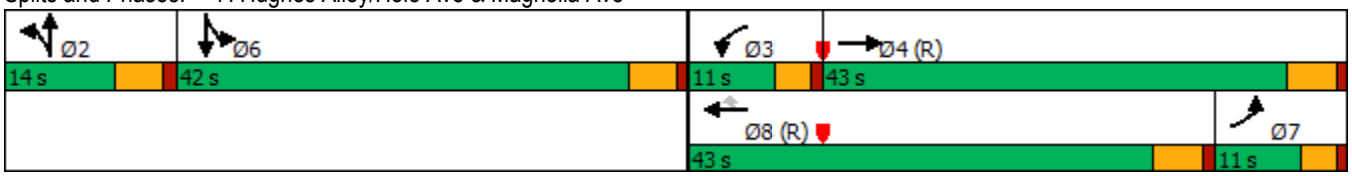


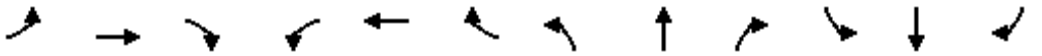
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	634	9	24	483	281	7	13	13	233	11	11
Future Volume (vph)	29	634	9	24	483	281	7	13	13	233	11	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		110	0		0	100		0
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	0.91	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.998				0.850		0.925			0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5075	0	3433	5085	1583	1770	1723	0	3433	1723	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5075	0	3433	5085	1583	1770	1723	0	3433	1723	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				299		14			12	
Link Speed (mph)		40			45			40			40	
Link Distance (ft)		506			714			431			1963	
Travel Time (s)		8.6			10.8			7.3			33.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	31	674	10	26	514	299	7	14	14	248	12	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	31	684	0	26	514	299	7	28	0	248	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	33.0	33.0	12.0	12.0		40.0	40.0	
Total Split (s)	11.0	43.0		11.0	43.0	43.0	14.0	14.0		42.0	42.0	
Total Split (%)	10.0%	39.1%		10.0%	39.1%	39.1%	12.7%	12.7%		38.2%	38.2%	
Maximum Green (s)	7.0	38.0		7.0	38.0	38.0	9.0	9.0		37.0	37.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		None	None	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		14.0			21.0	21.0				28.0	28.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	7.0	62.4		7.1	62.5	62.5	9.0	9.0		16.9	16.9	
Actuated g/C Ratio	0.06	0.57		0.06	0.57	0.57	0.08	0.08		0.15	0.15	
v/c Ratio	0.14	0.24		0.12	0.18	0.29	0.05	0.18		0.47	0.09	
Control Delay	32.6	2.5		49.8	14.0	3.2	47.6	33.1		41.4	23.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	32.6	2.5		49.8	14.0	3.2	47.6	33.1		41.4	23.0	
LOS	C	A		D	B	A	D	C		D	C	
Approach Delay		3.8			11.3			36.0			39.7	
Approach LOS		A			B			D			D	
Queue Length 50th (ft)	10	8		9	61	0	5	9		97	10	
Queue Length 95th (ft)	28	55		23	122	56	19	38		111	30	
Internal Link Dist (ft)		426			634			351			1883	
Turn Bay Length (ft)	125			150		110				100		
Base Capacity (vph)	218	2879		220	2888	1028	144	153		1154	587	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.24		0.12	0.18	0.29	0.05	0.18		0.21	0.04	

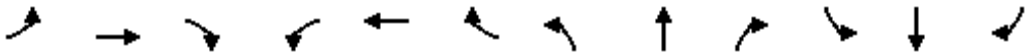
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 89 (81%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 40.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 7: Hughes Alley/Hole Ave & Magnolia Ave





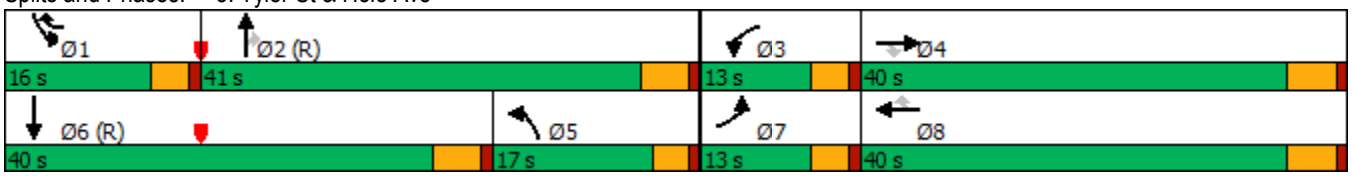
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	247	194	25	142	74	185	430	174	67	440	31
Future Volume (vph)	33	247	194	25	142	74	185	430	174	67	440	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	130		130	130		0	100		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	0.91
Frt			0.850			0.850			0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5034	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5034	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			109			181		10	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		702			1963			1448			757	
Travel Time (s)		12.0			33.5			24.7			12.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	34	257	202	26	148	77	193	448	181	70	458	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	257	202	26	148	77	193	448	181	70	490	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			



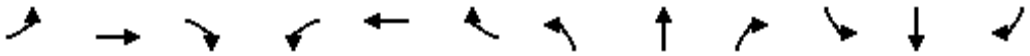
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	36.0	36.0	11.0	33.0	11.0	11.0	33.0	33.0	11.0	33.0	
Total Split (s)	13.0	40.0	40.0	13.0	40.0	16.0	17.0	41.0	41.0	16.0	40.0	
Total Split (%)	11.8%	36.4%	36.4%	11.8%	36.4%	14.5%	15.5%	37.3%	37.3%	14.5%	36.4%	
Maximum Green (s)	9.0	35.0	35.0	9.0	35.0	12.0	13.0	36.0	36.0	12.0	35.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
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	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		24.0	24.0		21.0			21.0	21.0		21.0	
Pedestrian Calls (#/hr)		5	5		5			5	5		5	
Act Effct Green (s)	7.8	16.4	16.4	7.6	16.1	31.0	13.0	64.8	64.8	9.9	59.5	
Actuated g/C Ratio	0.07	0.15	0.15	0.07	0.15	0.28	0.12	0.59	0.59	0.09	0.54	
v/c Ratio	0.27	0.49	0.50	0.21	0.29	0.15	0.48	0.22	0.18	0.44	0.18	
Control Delay	53.7	44.8	9.2	54.0	40.1	2.8	31.1	6.9	1.6	55.5	15.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.7	44.8	9.2	54.0	40.1	2.8	31.1	6.9	1.6	55.5	15.1	
LOS	D	D	A	D	D	A	C	A	A	E	B	
Approach Delay		30.8			30.1			11.4			20.2	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	23	91	0	19	52	0	75	36	0	48	61	
Queue Length 95th (ft)	55	109	54	48	60	1	107	49	6	91	116	
Internal Link Dist (ft)		622			1883			1368			677	
Turn Bay Length (ft)	100		100	130		130	130			100		
Base Capacity (vph)	144	1126	641	144	1126	556	405	2083	1006	197	2725	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.24	0.23	0.32	0.18	0.13	0.14	0.48	0.22	0.18	0.36	0.18	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 32 (29%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 20.4		Intersection LOS: C	
Intersection Capacity Utilization 45.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Tyler St & Hole Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	2	5	24	3	8	46	1035	48	10	734	3
Future Volume (vph)	5	2	5	24	3	8	46	1035	48	10	734	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		115	215		0	170		0
Storage Lanes	0		0	1		1	1		0	2		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.91	0.91
Frt		0.944				0.850		0.993			0.999	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	1723	0	1770	1863	1583	1770	6363	0	3433	5080	0
Flt Permitted		0.905		0.750			0.950			0.950		
Satd. Flow (perm)	0	1591	0	1397	1863	1583	1770	6363	0	3433	5080	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				109		10			1	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		221			241			548			651	
Travel Time (s)		6.0			6.6			9.3			11.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	5	2	5	25	3	8	47	1067	49	10	757	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	25	3	8	47	1116	0	10	760	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						

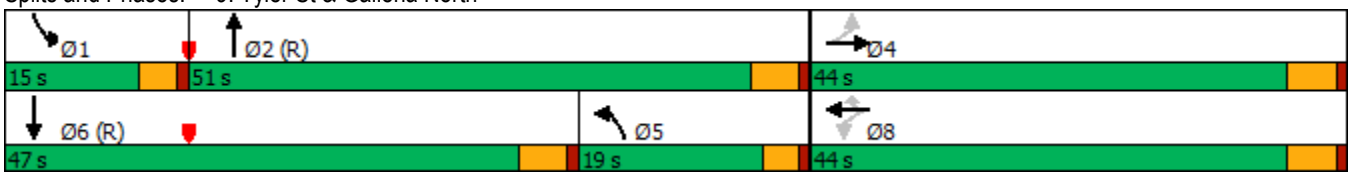


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	40.0	40.0		43.0	43.0	43.0	11.0	30.0		11.0	23.0	
Total Split (s)	44.0	44.0		44.0	44.0	44.0	19.0	51.0		15.0	47.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	17.3%	46.4%		13.6%	42.7%	
Maximum Green (s)	39.0	39.0		39.0	39.0	39.0	15.0	46.0		11.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
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	
Total Lost Time (s)		5.0		5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag							Lag	Lag		Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	28.0	28.0		31.0	31.0	31.0		18.0			11.0	
Pedestrian Calls (#/hr)	5	5		5	5	5		5			5	
Act Effct Green (s)		13.6		13.6	13.6	13.6	13.4	91.0		7.0	77.0	
Actuated g/C Ratio		0.12		0.12	0.12	0.12	0.12	0.83		0.06	0.70	
v/c Ratio		0.06		0.15	0.01	0.03	0.22	0.21		0.05	0.21	
Control Delay		26.8		39.4	33.3	0.1	30.6	1.9		37.5	14.2	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		26.8		39.4	33.3	0.1	30.6	1.9		37.5	14.2	
LOS		C		D	C	A	C	A		D	B	
Approach Delay		26.8			30.2			3.1			14.5	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		5		17	2	0	30	29		3	147	
Queue Length 95th (ft)		17		31	8	0	51	14		m12	194	
Internal Link Dist (ft)		141			161			468			571	
Turn Bay Length (ft)						115	215			170		
Base Capacity (vph)		567		495	660	631	241	5267		343	3557	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.02		0.05	0.00	0.01	0.20	0.21		0.03	0.21	

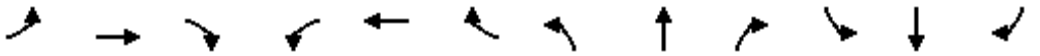
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 96 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 8.2		Intersection LOS: A	
Intersection Capacity Utilization 40.0%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 9: Tyler St & Galleria North



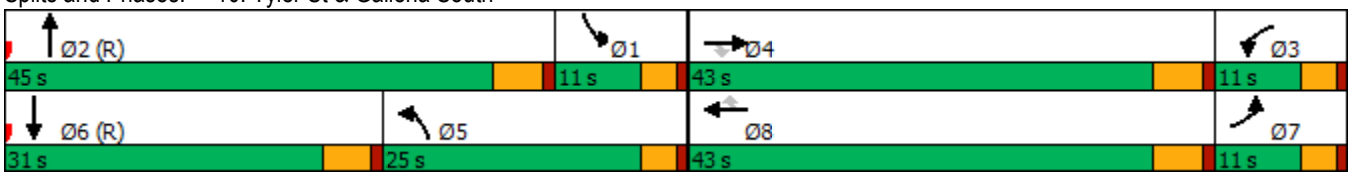
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	3	20	35	4	6	426	1130	20	15	685	38
Future Volume (vph)	33	3	20	35	4	6	426	1130	20	15	685	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		50	240		0	155		0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.86	0.86	1.00	0.86	0.86
Frt			0.850			0.850		0.997			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	3433	6389	0	1770	6357	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	3433	6389	0	1770	6357	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			149			149		3			9	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		267			252			595			487	
Travel Time (s)		7.3			6.9			10.1			8.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	34	3	21	36	4	6	439	1165	21	15	706	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	3	21	36	4	6	439	1186	0	15	745	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	12.0	12.0	11.0	43.0	43.0	11.0	26.0		11.0	30.0	
Total Split (s)	11.0	43.0	43.0	11.0	43.0	43.0	25.0	45.0		11.0	31.0	
Total Split (%)	10.0%	39.1%	39.1%	10.0%	39.1%	39.1%	22.7%	40.9%		10.0%	28.2%	
Maximum Green (s)	7.0	38.0	38.0	7.0	38.0	38.0	21.0	40.0		7.0	26.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	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	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)					7.0	7.0		7.0			7.0	
Flash Dont Walk (s)					31.0	31.0		14.0			18.0	
Pedestrian Calls (#/hr)					5	5		5			5	
Act Effct Green (s)	9.7	7.0	7.0	13.5	13.2	13.2	18.6	82.3		7.0	62.1	
Actuated g/C Ratio	0.09	0.06	0.06	0.12	0.12	0.12	0.17	0.75		0.06	0.56	
v/c Ratio	0.22	0.03	0.09	0.09	0.02	0.02	0.76	0.25		0.13	0.21	
Control Delay	50.5	49.0	0.7	38.3	34.5	0.2	52.4	10.0		46.4	6.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	50.5	49.0	0.7	38.3	34.5	0.2	52.4	10.0		46.4	6.6	
LOS	D	D	A	D	C	A	D	A		D	A	
Approach Delay		32.4			33.0			21.4			7.4	
Approach LOS		C			C			C			A	
Queue Length 50th (ft)	20	2	0	12	3	0	153	64		10	34	
Queue Length 95th (ft)	56	12	0	20	10	0	204	222		31	35	
Internal Link Dist (ft)		187			172			515			407	
Turn Bay Length (ft)				150		50	240			155		
Base Capacity (vph)	156	643	644	421	643	644	655	4779		112	3594	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.22	0.00	0.03	0.09	0.01	0.01	0.67	0.25		0.13	0.21	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 95 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 42.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 10: Tyler St & Galleria South



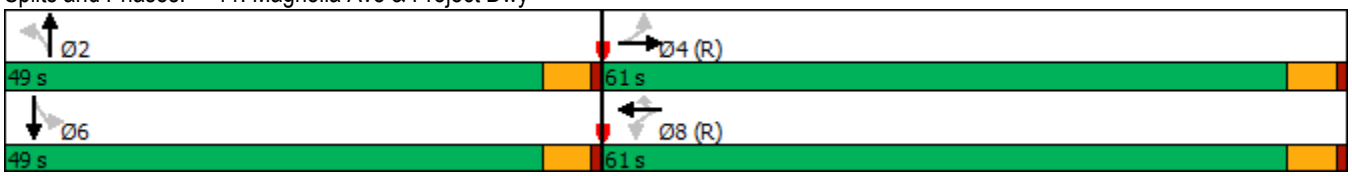
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	617	10	10	585	76	10	0	10	43	0	28
Future Volume (vph)	31	617	10	10	585	76	10	0	10	43	0	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998				0.850		0.932			0.947	
Flt Protected	0.950			0.950				0.976			0.971	
Satd. Flow (prot)	1770	5075	0	1770	5085	1583	0	1694	0	0	1713	0
Flt Permitted	0.364			0.342				0.907			0.845	
Satd. Flow (perm)	678	5075	0	637	5085	1583	0	1575	0	0	1491	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				86		20			32	
Link Speed (mph)		40			40			30			25	
Link Distance (ft)		546			704			289			334	
Travel Time (s)		9.3			12.0			6.6			9.1	
Peak Hour Factor	0.88	0.88	0.92	0.92	0.88	0.88	0.92	0.92	0.92	0.88	0.92	0.88
Adj. Flow (vph)	35	701	11	11	665	86	11	0	11	49	0	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	35	712	0	11	665	86	0	22	0	0	81	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		

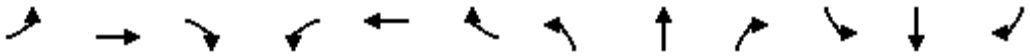
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		19.0	19.0	19.0	40.0	40.0		36.0	36.0	
Total Split (s)	61.0	61.0		61.0	61.0	61.0	49.0	49.0		49.0	49.0	
Total Split (%)	55.5%	55.5%		55.5%	55.5%	55.5%	44.5%	44.5%		44.5%	44.5%	
Maximum Green (s)	56.0	56.0		56.0	56.0	56.0	44.0	44.0		44.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
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	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0	7.0	28.0	28.0		24.0	24.0	
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		5	5	
Act Effct Green (s)	56.0	56.0		56.0	56.0	56.0		44.0			44.0	
Actuated g/C Ratio	0.51	0.51		0.51	0.51	0.51		0.40			0.40	
v/c Ratio	0.10	0.28		0.03	0.26	0.10		0.03			0.13	
Control Delay	16.5	20.3		18.9	20.4	8.6		9.1			14.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	16.5	20.3		18.9	20.4	8.6		9.1			14.0	
LOS	B	C		B	C	A		A			B	
Approach Delay		20.1			19.0			9.1			14.0	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	21	174		4	90	4		1			21	
Queue Length 95th (ft)	47	204		m11	110	m14		17			53	
Internal Link Dist (ft)		466			624			209			254	
Turn Bay Length (ft)	100			100		100						
Base Capacity (vph)	345	2585		324	2588	848		642			615	
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	0.10	0.28		0.03	0.26	0.10		0.03			0.13	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 68 (62%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.28
Intersection Signal Delay: 19.1 Intersection LOS: B
Intersection Capacity Utilization 36.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Magnolia Ave & Project Dwy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	806	30	61	780	112	124	134	125	101	56	146
Future Volume (veh/h)	210	806	30	61	780	112	124	134	125	101	56	146
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	216	831	31	63	804	115	128	138	129	104	58	151
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1556	58	162	1267	181	211	194	181	130	307	274
Arrive On Green	0.14	0.45	0.45	0.09	0.41	0.41	0.12	0.22	0.22	0.07	0.17	0.17
Sat Flow, veh/h	1781	3493	130	1781	3121	446	1781	889	831	1781	1777	1585
Grp Volume(v), veh/h	216	423	439	63	458	461	128	0	267	104	58	151
Grp Sat Flow(s),veh/h/ln	1781	1777	1847	1781	1777	1790	1781	0	1721	1781	1777	1585
Q Serve(g_s), s	13.1	19.0	19.0	3.7	22.7	22.7	7.5	0.0	15.8	6.3	3.1	9.6
Cycle Q Clear(g_c), s	13.1	19.0	19.0	3.7	22.7	22.7	7.5	0.0	15.8	6.3	3.1	9.6
Prop In Lane	1.00		0.07	1.00		0.25	1.00		0.48	1.00		1.00
Lane Grp Cap(c), veh/h	248	792	823	162	721	727	211	0	375	130	307	274
V/C Ratio(X)	0.87	0.53	0.53	0.39	0.63	0.63	0.61	0.00	0.71	0.80	0.19	0.55
Avail Cap(c_a), veh/h	340	792	823	162	721	727	243	0	375	162	307	274
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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	22.2	22.2	47.1	26.1	26.1	46.1	0.0	39.8	50.2	38.9	41.6
Incr Delay (d2), s/veh	16.3	2.6	2.5	1.5	4.2	4.2	3.4	0.0	10.9	20.1	1.4	7.8
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	6.8	8.1	8.4	1.7	10.0	10.0	3.4	0.0	7.6	3.5	1.4	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.6	24.8	24.7	48.7	30.4	30.3	49.4	0.0	50.7	70.3	40.3	49.4
LnGrp LOS	E	C	C	D	C	C	D	A	D	E	D	D
Approach Vol, veh/h		1078			982			395			313	
Approach Delay, s/veh		32.3			31.5			50.3			54.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	29.0	15.0	54.0	17.0	24.0	19.3	49.7
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	10.0	24.0	9.0	* 49	15.0	19.0	21.0	37.0
Max Q Clear Time (g_c+I1), s	8.3	17.8	5.7	21.0	9.5	11.6	15.1	24.7
Green Ext Time (p_c), s	0.0	0.7	0.0	5.6	0.1	0.6	0.3	4.4

Intersection Summary	
HCM 6th Ctrl Delay	37.1
HCM 6th LOS	D

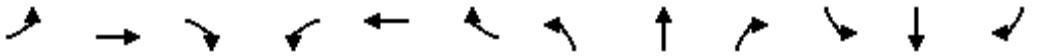
Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	1005	39	91	845	8	46	0	76	0	0	9
Future Volume (veh/h)	22	1005	39	91	845	8	46	0	76	0	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	23	1069	41	97	899	9	49	0	81	0	0	10
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	2340	90	389	1999	20	334	357	303	65	357	303
Arrive On Green	0.13	0.46	0.46	0.44	1.00	1.00	0.19	0.00	0.19	0.00	0.00	0.19
Sat Flow, veh/h	1781	5046	193	1781	3605	36	1405	1870	1585	1317	1870	1585
Grp Volume(v), veh/h	23	721	389	97	443	465	49	0	81	0	0	10
Grp Sat Flow(s),veh/h/ln	1781	1702	1836	1781	1777	1864	1405	1870	1585	1317	1870	1585
Q Serve(g_s), s	1.3	15.9	15.9	3.8	0.0	0.0	3.2	0.0	4.8	0.0	0.0	0.6
Cycle Q Clear(g_c), s	1.3	15.9	15.9	3.8	0.0	0.0	3.2	0.0	4.8	0.0	0.0	0.6
Prop In Lane	1.00		0.11	1.00		0.02	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	1578	851	389	985	1034	334	357	303	65	357	303
V/C Ratio(X)	0.10	0.46	0.46	0.25	0.45	0.45	0.15	0.00	0.27	0.00	0.00	0.03
Avail Cap(c_a), veh/h	227	1578	851	389	985	1034	334	357	303	65	357	303
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	20.1	20.1	25.3	0.0	0.0	37.3	0.0	37.9	0.0	0.0	36.2
Incr Delay (d2), s/veh	0.2	1.0	1.8	0.3	1.3	1.2	0.9	0.0	2.2	0.0	0.0	0.2
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	0.6	6.2	6.8	1.5	0.4	0.4	1.2	0.0	2.0	0.0	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	21.0	21.8	25.6	1.3	1.2	38.2	0.0	40.1	0.0	0.0	36.4
LnGrp LOS	D	C	C	C	A	A	D	A	D	A	A	D
Approach Vol, veh/h		1133			1005			130			10	
Approach Delay, s/veh		21.7			3.6			39.4			36.4	
Approach LOS		C			A			D			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	26.0	28.0	56.0	26.0	18.0	66.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	21.0	24.0	51.0	21.0	14.0	61.0
Max Q Clear Time (g_c+I1), s	6.8	5.8	17.9	2.6	3.3	2.0
Green Ext Time (p_c), s	0.3	0.2	8.3	0.0	0.0	6.4

Intersection Summary	
HCM 6th Ctrl Delay	14.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	45	1038	46	141	884	13	46	13	85	11	2	23
Future Volume (veh/h)	45	1038	46	141	884	13	46	13	85	11	2	23
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	46	1070	47	145	911	13	47	13	88	11	2	24
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	130	2416	106	178	1777	793	452	61	410	381	36	431
Arrive On Green	0.15	0.96	0.96	0.03	0.17	0.17	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1781	5015	220	1781	3554	1585	1385	208	1409	1294	123	1480
Grp Volume(v), veh/h	46	726	391	145	911	13	47	0	101	11	0	26
Grp Sat Flow(s),veh/h/ln	1781	1702	1831	1781	1777	1585	1385	0	1617	1294	0	1604
Q Serve(g_s), s	2.6	1.5	1.5	8.9	25.7	0.8	2.8	0.0	5.2	0.7	0.0	1.3
Cycle Q Clear(g_c), s	2.6	1.5	1.5	8.9	25.7	0.8	4.1	0.0	5.2	5.9	0.0	1.3
Prop In Lane	1.00		0.12	1.00		1.00	1.00		0.87	1.00		0.92
Lane Grp Cap(c), veh/h	130	1640	882	178	1777	793	452	0	470	381	0	467
V/C Ratio(X)	0.36	0.44	0.44	0.81	0.51	0.02	0.10	0.00	0.21	0.03	0.00	0.06
Avail Cap(c_a), veh/h	146	1640	882	340	1777	793	452	0	470	381	0	467
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	0.94	0.94	0.94	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.7	1.1	1.1	52.2	33.7	23.3	29.6	0.0	29.5	31.7	0.0	28.1
Incr Delay (d2), s/veh	1.5	0.8	1.4	8.2	1.0	0.0	0.5	0.0	1.0	0.1	0.0	0.2
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	1.1	0.5	0.7	4.5	12.4	0.3	1.0	0.0	2.2	0.2	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.1	1.8	2.5	60.3	34.7	23.3	30.0	0.0	30.5	31.9	0.0	28.3
LnGrp LOS	D	A	A	E	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1163			1069			148			37	
Approach Delay, s/veh		3.8			38.0			30.4			29.4	
Approach LOS		A			D			C			C	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		37.0	15.0	58.0		37.0	13.0	60.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	5.0	* 5				
Max Green Setting (Gmax), s		32.0	21.0	43.0		32.0	9.0	* 55				
Max Q Clear Time (g_c+I1), s		7.2	10.9	3.5		7.9	4.6	27.7				
Green Ext Time (p_c), s		0.7	0.2	8.6		0.1	0.0	6.8				

Intersection Summary												
HCM 6th Ctrl Delay			21.0									
HCM 6th LOS			C									

Notes

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

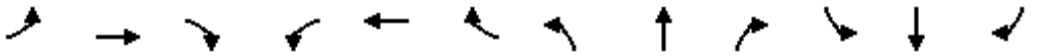
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	692	295	279	583	160	327	735	328	231	648	177
Future Volume (veh/h)	183	692	295	279	583	160	327	735	328	231	648	177
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	187	706	301	285	595	163	334	750	335	236	661	181
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	243	1764	684	679	1926	517	298	1016	627	299	970	412
Arrive On Green	0.14	0.69	0.69	0.39	0.96	0.96	0.17	0.40	0.40	0.03	0.06	0.06
Sat Flow, veh/h	3456	5106	1585	3456	4006	1075	3456	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	187	706	301	285	504	254	334	750	335	236	661	181
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1702	1677	1728	1702	1585	1728	1702	1585
Q Serve(g_s), s	5.7	6.5	0.0	6.6	0.9	0.9	9.5	13.8	3.7	7.5	13.9	7.9
Cycle Q Clear(g_c), s	5.7	6.5	0.0	6.6	0.9	0.9	9.5	13.8	3.7	7.5	13.9	7.9
Prop In Lane	1.00		1.00	1.00		0.64	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	243	1764	684	679	1637	806	298	1016	627	299	970	412
V/C Ratio(X)	0.77	0.40	0.44	0.42	0.31	0.32	1.12	0.74	0.53	0.79	0.68	0.44
Avail Cap(c_a), veh/h	251	1764	684	679	1637	806	298	1671	830	314	1764	659
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.33	0.33	0.33
Upstream Filter(I)	0.92	0.92	0.92	0.93	0.93	0.93	0.95	0.95	0.95	0.89	0.89	0.89
Uniform Delay (d), s/veh	46.4	12.1	9.2	28.8	1.1	1.1	45.5	30.7	8.3	52.4	48.3	21.3
Incr Delay (d2), s/veh	12.2	0.6	1.9	0.4	0.5	1.0	87.5	1.0	0.7	11.1	0.8	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	2.7	2.1	2.5	2.5	0.3	0.5	7.2	4.6	2.7	3.8	6.4	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.7	12.8	11.1	29.2	1.6	2.1	133.0	31.7	9.0	63.5	49.1	22.0
LnGrp LOS	E	B	B	C	A	A	F	C	A	E	D	C
Approach Vol, veh/h		1194			1043			1419			1078	
Approach Delay, s/veh		19.5			9.2			50.2			47.7	
Approach LOS		B			A			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.5	26.9	26.6	43.0	14.5	25.9	11.7	57.9
Change Period (Y+Rc), s	4.0	5.0	5.0	* 5	5.0	* 5	4.0	5.0
Max Green Setting (Gmax), s	10.0	36.0	8.0	* 38	8.0	* 38	8.0	38.0
Max Q Clear Time (g_c+I1), s	9.5	15.8	8.6	8.5	11.5	15.9	7.7	2.9
Green Ext Time (p_c), s	0.0	6.1	0.0	6.2	0.0	5.0	0.0	5.3

Intersection Summary	
HCM 6th Ctrl Delay	32.9
HCM 6th LOS	C

Notes

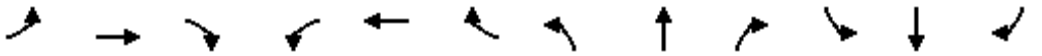
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	948	205	50	858	41	93	8	70	62	16	97
Future Volume (veh/h)	112	948	205	50	858	41	93	8	70	62	16	97
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	1042	225	55	943	45	102	9	77	68	18	107
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	638	2182	677	524	1816	87	202	283	240	113	34	128
Arrive On Green	0.72	0.85	0.85	0.59	0.73	0.73	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1781	5106	1585	1781	4994	238	1266	1870	1585	456	223	845
Grp Volume(v), veh/h	123	1042	225	55	642	346	102	9	77	193	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1828	1266	1870	1585	1524	0	0
Q Serve(g_s), s	2.5	5.5	3.2	1.5	9.1	9.1	0.0	0.5	4.8	11.2	0.0	0.0
Cycle Q Clear(g_c), s	2.5	5.5	3.2	1.5	9.1	9.1	13.3	0.5	4.8	13.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.13	1.00		1.00	0.35		0.55
Lane Grp Cap(c), veh/h	638	2182	677	524	1238	665	202	283	240	275	0	0
V/C Ratio(X)	0.19	0.48	0.33	0.10	0.52	0.52	0.50	0.03	0.32	0.70	0.00	0.00
Avail Cap(c_a), veh/h	638	2182	677	524	1238	665	425	612	519	538	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.4	5.0	4.8	16.3	10.8	10.8	45.3	39.8	41.7	45.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.7	1.1	0.1	1.4	2.5	1.9	0.0	0.8	3.3	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	0.9	1.4	1.1	0.6	2.6	3.1	2.8	0.2	1.9	5.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	5.6	6.0	16.3	12.1	13.3	47.2	39.9	42.4	48.5	0.0	0.0
LnGrp LOS	B	A	A	B	B	B	D	D	D	D	A	A
Approach Vol, veh/h		1390			1043			188			193	
Approach Delay, s/veh		6.1			12.8			44.9			48.5	
Approach LOS		A			B			D			D	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		21.6	36.4	52.0		21.6	43.4	45.0				
Change Period (Y+Rc), s		5.0	4.0	5.0		5.0	4.0	5.0				
Max Green Setting (Gmax), s		36.0	13.0	47.0		36.0	20.0	40.0				
Max Q Clear Time (g_c+I1), s		15.3	3.5	7.5		15.5	4.5	11.1				
Green Ext Time (p_c), s		0.6	0.1	9.7		1.1	0.2	6.9				

Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	1020	41	104	947	22	0	0	122	20	0	35
Future Volume (veh/h)	31	1020	41	104	947	22	0	0	122	20	0	35
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	1870	1870	1870	1870	1870	1870	0	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	1074	0	109	997	23	0	0	128	21	0	37
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, %	2	2	2	2	2	2	0	0	2	2	2	2
Cap, veh/h	372	1625		486	1961	45	0	0	0	0	0	0
Arrive On Green	0.42	0.64	0.00	0.55	0.76	0.76	0.00	0.00	0.00	0.28	0.00	0.28
Sat Flow, veh/h	1781	5106	1585	1781	5135	118		0		0	0	0
Grp Volume(v), veh/h	33	1074	0	109	661	359		0.0		58	0	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1849				0	0	0
Q Serve(g_s), s	1.2	14.5	0.0	3.5	8.2	8.3				0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.2	14.5	0.0	3.5	8.2	8.3				0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.06				0.36		0.64
Lane Grp Cap(c), veh/h	372	1625		486	1300	706				0	0	0
V/C Ratio(X)	0.09	0.66		0.22	0.51	0.51				0.00	0.00	0.00
Avail Cap(c_a), veh/h	372	1625		486	1300	706				0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.00	0.90	0.90	0.90				1.00	0.00	0.00
Uniform Delay (d), s/veh	25.7	16.3	0.0	19.0	9.0	9.0				28.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.0	0.0	0.2	1.3	2.4				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	0.5	4.1	0.0	1.4	2.3	2.8				1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.8	18.3	0.0	19.2	10.3	11.4				28.4	0.0	0.0
LnGrp LOS	C	B		B	B	B				C	A	A
Approach Vol, veh/h		1107	A		1129						58	
Approach Delay, s/veh		18.5			11.5						28.4	
Approach LOS		B			B						C	

Timer - Assigned Phs		3	4		6	7	8					
Phs Duration (G+Y+Rc), s		34.0	40.0		36.0	27.0	47.0					
Change Period (Y+Rc), s		4.0	5.0		5.0	4.0	5.0					
Max Green Setting (Gmax), s		14.0	35.0		31.0	7.0	42.0					
Max Q Clear Time (g_c+I1), s		5.5	16.5		2.0	3.2	10.3					
Green Ext Time (p_c), s		0.1	7.0		0.3	0.0	7.3					

Intersection Summary												
HCM 6th Ctrl Delay		15.3										
HCM 6th LOS		B										

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1047	33	173	878	427	55	80	123	549	117	63
Future Volume (veh/h)	66	1047	33	173	878	427	55	80	123	549	117	63
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	1114	35	184	934	454	59	85	131	584	124	67
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	560	2036	64	245	1532	476	259	97	149	728	241	130
Arrive On Green	0.32	0.80	0.80	0.07	0.30	0.30	0.15	0.15	0.15	0.07	0.07	0.07
Sat Flow, veh/h	3456	5086	160	3456	5106	1585	1781	664	1023	3456	1142	617
Grp Volume(v), veh/h	70	745	404	184	934	454	59	0	216	584	0	191
Grp Sat Flow(s),veh/h/ln	1728	1702	1842	1728	1702	1585	1781	0	1686	1728	0	1759
Q Serve(g_s), s	1.6	8.6	8.6	5.7	17.2	30.9	3.2	0.0	13.8	18.3	0.0	11.5
Cycle Q Clear(g_c), s	1.6	8.6	8.6	5.7	17.2	30.9	3.2	0.0	13.8	18.3	0.0	11.5
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.61	1.00		0.35
Lane Grp Cap(c), veh/h	560	1362	737	245	1532	476	259	0	245	728	0	371
V/C Ratio(X)	0.13	0.55	0.55	0.75	0.61	0.95	0.23	0.00	0.88	0.80	0.00	0.52
Avail Cap(c_a), veh/h	560	1362	737	283	1532	476	259	0	245	1100	0	560
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	0.83	0.00	0.83
Uniform Delay (d), s/veh	31.7	7.4	7.4	50.2	33.0	37.8	41.5	0.0	46.1	48.9	0.0	45.8
Incr Delay (d2), s/veh	0.1	1.2	2.2	9.3	1.8	31.4	2.0	0.0	33.4	2.1	0.0	0.9
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	0.6	2.2	2.6	2.7	7.0	15.5	1.5	0.0	7.9	8.7	0.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	8.6	9.6	59.5	34.8	69.2	43.6	0.0	79.5	51.1	0.0	46.7
LnGrp LOS	C	A	A	E	C	E	D	A	E	D	A	D
Approach Vol, veh/h		1219			1572			275			775	
Approach Delay, s/veh		10.3			47.6			71.8			50.0	
Approach LOS		B			D			E			D	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	21.0	11.8	49.0	28.2	22.8	38.0
Change Period (Y+Rc), s	5.0	4.0	5.0	5.0	5.0	* 5
Max Green Setting (Gmax), s	16.0	9.0	31.0	35.0	7.0	* 33
Max Q Clear Time (g_c+I1), s	15.8	7.7	10.6	20.3	3.6	32.9
Green Ext Time (p_c), s	0.0	0.1	7.4	2.9	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	91	370	253	158	419	225	314	581	103	145	585	67
Future Volume (veh/h)	91	370	253	158	419	225	314	581	103	145	585	67
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	394	269	168	446	239	334	618	0	154	622	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	616	275	201	805	799	402	905		494	2169	
Arrive On Green	0.07	0.17	0.17	0.04	0.07	0.07	0.12	0.25	0.00	0.28	0.42	0.00
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	3456	3554	1585	1781	5274	0
Grp Volume(v), veh/h	97	394	269	168	446	239	334	618	0	154	622	0
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1728	1777	1585	1781	1702	0
Q Serve(g_s), s	5.9	11.3	14.1	10.3	13.3	2.2	10.4	17.3	0.0	7.5	8.8	0.0
Cycle Q Clear(g_c), s	5.9	11.3	14.1	10.3	13.3	2.2	10.4	17.3	0.0	7.5	8.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	122	616	275	201	805	799	402	905		494	2169	
V/C Ratio(X)	0.79	0.64	0.98	0.84	0.55	0.30	0.83	0.68		0.31	0.29	
Avail Cap(c_a), veh/h	194	1001	447	275	1163	959	503	905		494	2169	
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	0.79	0.79	0.79	0.84	0.84	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.5	42.3	26.2	51.9	45.5	8.1	47.5	37.0	0.0	31.4	20.7	0.0
Incr Delay (d2), s/veh	10.9	1.1	28.7	12.1	0.5	0.2	7.9	3.5	0.0	0.4	0.3	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	2.9	4.9	7.3	5.5	6.4	2.1	4.8	7.7	0.0	3.2	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	43.4	54.8	64.0	46.0	8.3	55.4	40.5	0.0	31.8	21.1	0.0
LnGrp LOS	E	D	D	E	D	A	E	D		C	C	
Approach Vol, veh/h		760			853			952	A		776	A
Approach Delay, s/veh		49.7			39.0			45.7			23.2	
Approach LOS		D			D			D			C	

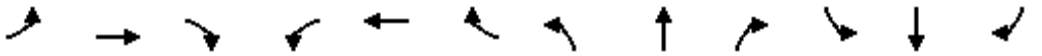
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.5	33.0	17.4	24.1	16.8	51.7	11.6	29.9
Change Period (Y+Rc), s	5.0	* 5	5.0	* 5	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	16.0	* 28	17.0	* 31	16.0	28.0	12.0	36.0
Max Q Clear Time (g_c+I1), s	9.5	19.3	12.3	16.1	12.4	10.8	7.9	15.3
Green Ext Time (p_c), s	0.2	2.5	0.2	2.9	0.4	3.7	0.1	3.5

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.

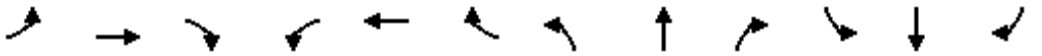
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	10	27	127	6	38	93	1275	99	69	1116	28
Future Volume (veh/h)	42	10	27	127	6	38	93	1275	99	69	1116	28
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	43	10	28	131	6	39	96	1314	102	71	1151	29
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	126	36	59	225	211	178	690	2677	207	1119	1909	48
Arrive On Green	0.11	0.11	0.11	0.11	0.11	0.11	0.39	0.44	0.44	0.65	0.75	0.75
Sat Flow, veh/h	676	320	526	1370	1870	1585	1781	6135	475	3456	5122	129
Grp Volume(v), veh/h	81	0	0	131	6	39	96	1033	383	71	765	415
Grp Sat Flow(s),veh/h/ln	1523	0	0	1370	1870	1585	1781	1609	1785	1728	1702	1847
Q Serve(g_s), s	3.5	0.0	0.0	4.6	0.3	2.5	3.8	16.9	17.0	0.8	11.4	11.4
Cycle Q Clear(g_c), s	5.3	0.0	0.0	9.9	0.3	2.5	3.8	16.9	17.0	0.8	11.4	11.4
Prop In Lane	0.53		0.35	1.00		1.00	1.00		0.27	1.00		0.07
Lane Grp Cap(c), veh/h	222	0	0	225	211	178	690	2106	779	1119	1269	688
V/C Ratio(X)	0.37	0.00	0.00	0.58	0.03	0.22	0.14	0.49	0.49	0.06	0.60	0.60
Avail Cap(c_a), veh/h	607	0	0	581	697	591	690	2106	779	1119	1269	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	45.6	0.0	0.0	47.6	43.4	44.4	21.8	22.2	22.3	13.3	10.2	10.2
Incr Delay (d2), s/veh	1.0	0.0	0.0	2.4	0.1	0.6	0.1	0.8	2.2	0.0	1.5	2.7
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	2.2	0.0	0.0	3.7	0.2	1.0	1.6	6.2	7.3	0.3	3.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.6	0.0	0.0	50.0	43.5	45.0	21.9	23.1	24.5	13.3	11.7	13.0
LnGrp LOS	D	A	A	D	D	D	C	C	C	B	B	B
Approach Vol, veh/h		81			176			1512			1251	
Approach Delay, s/veh		46.6			48.7			23.3			12.2	
Approach LOS		D			D			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	39.6	53.0		17.4	46.6	46.0		17.4				
Change Period (Y+Rc), s	4.0	5.0		5.0	4.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	48.0		41.0	14.0	41.0		41.0				
Max Q Clear Time (g_c+I1), s	2.8	19.0		7.3	5.8	13.4		11.9				
Green Ext Time (p_c), s	0.0	11.1		0.5	0.1	8.5		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			C									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	75	226	273	45	66	301	1199	151	76	1086	155
Future Volume (veh/h)	216	75	226	273	45	66	301	1199	151	76	1086	155
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	225	78	235	284	47	0	314	1249	157	79	1131	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	311	254	215	353	119		372	1591	199	564	3158	
Arrive On Green	0.17	0.14	0.14	0.10	0.06	0.00	0.11	0.27	0.27	0.32	0.49	0.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	3456	5834	730	1781	6696	0
Grp Volume(v), veh/h	225	78	235	284	47	0	314	1032	374	79	1131	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1728	1609	1739	1781	1609	0
Q Serve(g_s), s	13.1	4.1	11.7	8.8	2.7	0.0	9.8	21.8	21.9	3.5	11.9	0.0
Cycle Q Clear(g_c), s	13.1	4.1	11.7	8.8	2.7	0.0	9.8	21.8	21.9	3.5	11.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.00
Lane Grp Cap(c), veh/h	311	254	215	353	119		372	1316	474	564	3158	
V/C Ratio(X)	0.72	0.31	1.09	0.80	0.39		0.84	0.78	0.79	0.14	0.36	
Avail Cap(c_a), veh/h	311	680	576	471	646		377	1316	474	564	3158	
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	42.9	29.0	48.3	49.5	0.0	48.2	37.0	37.1	26.9	17.3	0.0
Incr Delay (d2), s/veh	8.1	0.7	56.6	7.3	2.1	0.0	15.8	4.7	12.5	0.1	0.3	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	6.5	2.0	7.9	4.2	1.3	0.0	5.0	8.8	10.6	1.5	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.0	43.5	85.5	55.6	51.6	0.0	64.0	41.7	49.6	27.0	17.6	0.0
LnGrp LOS	D	D	F	E	D		E	D	D	C	B	
Approach Vol, veh/h		538			331	A		1720			1210	A
Approach Delay, s/veh		65.0			55.1			47.5			18.2	
Approach LOS		E			E			D			B	

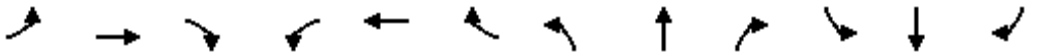
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.8	35.0	15.2	19.9	15.8	59.0	23.2	12.0
Change Period (Y+Rc), s	5.0	* 5	4.0	5.0	4.0	5.0	4.0	5.0
Max Green Setting (Gmax), s	7.0	* 30	15.0	40.0	12.0	25.0	17.0	38.0
Max Q Clear Time (g_c+I1), s	5.5	23.9	10.8	13.7	11.8	13.9	15.1	4.7
Green Ext Time (p_c), s	0.0	4.1	0.4	1.3	0.0	5.5	0.1	0.2

Intersection Summary	
HCM 6th Ctrl Delay	41.3
HCM 6th LOS	D

Notes

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

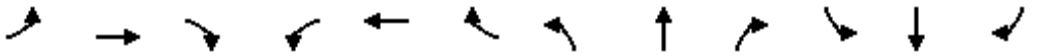
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	1060	10	10	961	136	10	0	10	128	0	76
Future Volume (veh/h)	75	1060	10	10	961	136	10	0	10	128	0	76
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	77	1093	11	11	991	140	11	0	11	132	0	78
Peak Hour Factor	0.97	0.97	0.92	0.92	0.97	0.97	0.92	0.92	0.92	0.97	0.92	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	337	2843	29	265	2785	865	301	16	268	378	12	199
Arrive On Green	0.37	0.37	0.37	1.00	1.00	1.00	0.36	0.00	0.36	0.36	0.00	0.36
Sat Flow, veh/h	498	5213	52	511	5106	1585	693	43	736	894	33	548
Grp Volume(v), veh/h	77	714	390	11	991	140	22	0	0	210	0	0
Grp Sat Flow(s),veh/h/ln	498	1702	1861	511	1702	1585	1472	0	0	1474	0	0
Q Serve(g_s), s	12.0	17.0	17.0	0.7	0.0	0.0	0.0	0.0	0.0	10.3	0.0	0.0
Cycle Q Clear(g_c), s	12.0	17.0	17.0	17.7	0.0	0.0	0.9	0.0	0.0	11.4	0.0	0.0
Prop In Lane	1.00		0.03	1.00		1.00	0.50		0.50	0.63		0.37
Lane Grp Cap(c), veh/h	337	1857	1015	265	2785	865	584	0	0	589	0	0
V/C Ratio(X)	0.23	0.38	0.38	0.04	0.36	0.16	0.04	0.00	0.00	0.36	0.00	0.00
Avail Cap(c_a), veh/h	337	1857	1015	265	2785	865	584	0	0	589	0	0
HCM Platoon Ratio	0.67	0.67	0.67	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.90	0.90	0.90	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.7	21.3	21.3	2.5	0.0	0.0	22.6	0.0	0.0	25.8	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.5	1.0	0.3	0.3	0.4	0.0	0.0	0.0	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	1.6	7.2	8.1	0.0	0.1	0.1	0.4	0.0	0.0	4.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	21.8	22.2	2.8	0.3	0.4	22.6	0.0	0.0	27.5	0.0	0.0
LnGrp LOS	C	C	C	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		1181			1142			22			210	
Approach Delay, s/veh		21.9			0.3			22.6			27.5	
Approach LOS		C			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		45.0		65.0		45.0		65.0				
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0				
Max Green Setting (Gmax), s		40.0		60.0		40.0		60.0				
Max Q Clear Time (g_c+I1), s		2.9		19.0		13.4		19.7				
Green Ext Time (p_c), s		0.1		10.0		1.3		8.8				

Intersection Summary												
HCM 6th Ctrl Delay			12.7									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	806	30	61	780	112	124	134	125	101	56	146
Future Volume (vph)	210	806	30	61	780	112	124	134	125	101	56	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	195		0	225		0	80		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.995			0.981			0.928			0.892	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3522	0	1770	3472	0	1770	1729	0	1770	3157	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3522	0	1770	3472	0	1770	1729	0	1770	3157	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			15			39			151	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		647			586			521			537	
Travel Time (s)		11.0			10.0			8.9			9.2	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	216	831	31	63	804	115	128	138	129	104	58	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	862	0	63	919	0	128	267	0	104	209	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												

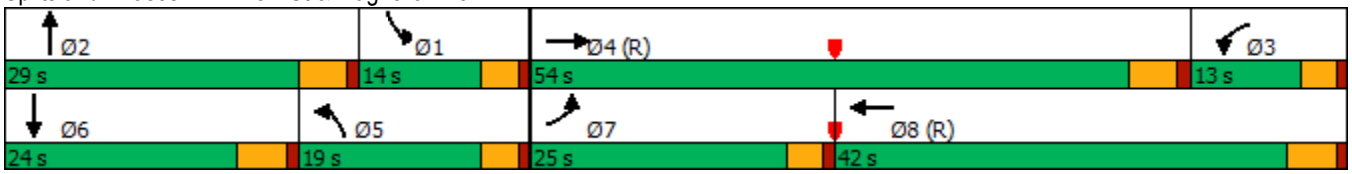
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	26.0		11.0	12.0		11.0	23.0	
Total Split (s)	25.0	54.0		13.0	42.0		19.0	29.0		14.0	24.0	
Total Split (%)	22.7%	49.1%		11.8%	38.2%		17.3%	26.4%		12.7%	21.8%	
Maximum Green (s)	21.0	49.0		9.0	37.0		15.0	24.0		10.0	19.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
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	0.0	
Total Lost Time (s)	4.0	5.0		4.0	5.0		4.0	5.0		4.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag		Lag	Lead		Lag	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	Max		None	Max	
Walk Time (s)		7.0			7.0						7.0	
Flash Dont Walk (s)		14.0			14.0						11.0	
Pedestrian Calls (#/hr)		5			5						5	
Act Effct Green (s)	17.7	52.1		8.6	40.8		14.5	24.0		9.5	19.0	
Actuated g/C Ratio	0.16	0.47		0.08	0.37		0.13	0.22		0.09	0.17	
v/c Ratio	0.76	0.52		0.46	0.71		0.55	0.66		0.68	0.31	
Control Delay	61.1	22.3		29.4	7.5		54.1	42.0		71.5	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	61.1	22.3		29.4	7.5		54.1	42.0		71.5	13.9	
LOS	E	C		C	A		D	D		E	B	
Approach Delay		30.1			8.9			45.9			33.0	
Approach LOS		C			A			D			C	
Queue Length 50th (ft)	146	228		40	33		85	148		72	18	
Queue Length 95th (ft)	224	289		74	57		148	240		#147	52	
Internal Link Dist (ft)		567			506			441			457	
Turn Bay Length (ft)	195			225			80			100		
Base Capacity (vph)	337	1670		144	1297		241	407		160	670	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.64	0.52		0.44	0.71		0.53	0.66		0.65	0.31	

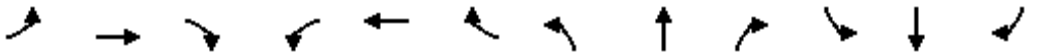
Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 72 (65%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 25.2 Intersection LOS: C
Intersection Capacity Utilization 72.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

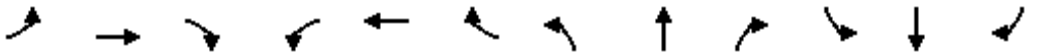
Queue shown is maximum after two cycles.

Splits and Phases: 1: Polk St & Magnolia Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	1005	39	91	845	8	46	0	76	0	0	9
Future Volume (vph)	22	1005	39	91	845	8	46	0	76	0	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	225		0	215		0	0		0	0		0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.999				0.850			0.850
Flt Protected	0.950			0.950			0.950					
Satd. Flow (prot)	1770	5055	0	1770	3536	0	1770	1863	1583	1863	1863	1583
Flt Permitted	0.950			0.950			0.757					
Satd. Flow (perm)	1770	5055	0	1770	3536	0	1410	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			1				332			321
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		357			547			306			241	
Travel Time (s)		6.1			9.3			8.3			6.6	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	23	1069	41	97	899	9	49	0	81	0	0	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	1110	0	97	908	0	49	0	81	0	0	10
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm		Perm	Perm		Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2		2	6		6

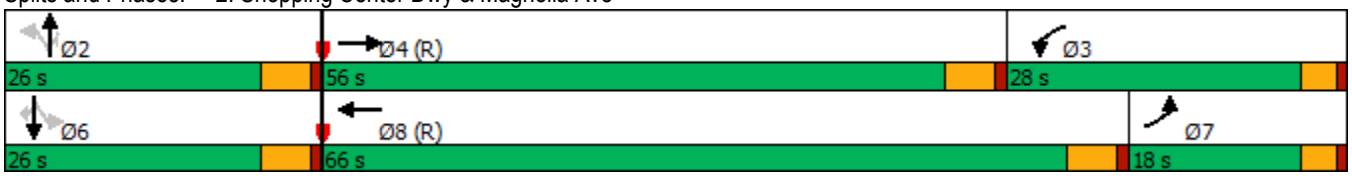


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	23.0		11.0	19.0		12.0	12.0	12.0	23.0	23.0	23.0
Total Split (s)	18.0	56.0		28.0	66.0		26.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	16.4%	50.9%		25.5%	60.0%		23.6%	23.6%	23.6%	23.6%	23.6%	23.6%
Maximum Green (s)	14.0	51.0		24.0	61.0		21.0	21.0	21.0	21.0	21.0	21.0
Yellow Time (s)	3.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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	0.0
Total Lost Time (s)	4.0	5.0		4.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lag	Lead							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max
Walk Time (s)		7.0			7.0					7.0	7.0	7.0
Flash Dont Walk (s)		11.0			7.0					11.0	11.0	11.0
Pedestrian Calls (#/hr)		5			5					5	5	5
Act Effct Green (s)	7.5	51.0		12.9	63.0		32.1		32.1			32.1
Actuated g/C Ratio	0.07	0.46		0.12	0.57		0.29		0.29			0.29
v/c Ratio	0.19	0.47		0.47	0.45		0.12		0.12			0.01
Control Delay	55.5	8.0		52.1	2.7		32.2		0.3			0.0
Queue Delay	0.0	0.0		0.0	0.1		0.0		0.0			0.0
Total Delay	55.5	8.0		52.1	2.9		32.2		0.3			0.0
LOS	E	A		D	A		C		A			A
Approach Delay		9.0			7.6			12.3				
Approach LOS		A			A			B				
Queue Length 50th (ft)	17	75		74	23		25		0			0
Queue Length 95th (ft)	m33	88		129	32		61		0			0
Internal Link Dist (ft)		277			467			226			161	
Turn Bay Length (ft)	225			215								
Base Capacity (vph)	225	2347		386	2024		411		696			689
Starvation Cap Reductn	0	0		0	321		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	0.10	0.47		0.25	0.53		0.12		0.12			0.01

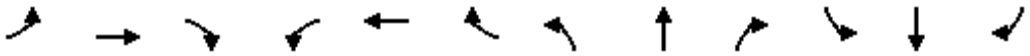
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 59 (54%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 8.5		Intersection LOS: A	
Intersection Capacity Utilization 47.8%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 2: Shopping Center Dwy & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	1038	46	141	884	13	46	13	85	11	2	23
Future Volume (vph)	45	1038	46	141	884	13	46	13	85	11	2	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	155		0	140		0	50		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994				0.850		0.869			0.862	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5055	0	1770	3539	1583	1770	1619	0	1770	1606	0
Flt Permitted	0.950			0.950			0.740			0.692		
Satd. Flow (perm)	1770	5055	0	1770	3539	1583	1378	1619	0	1289	1606	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				69		88			24	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		547			546			332			305	
Travel Time (s)		9.3			9.3			9.1			8.3	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	1070	47	145	911	13	47	13	88	11	2	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	1117	0	145	911	13	47	101	0	11	26	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases						8	2			6		

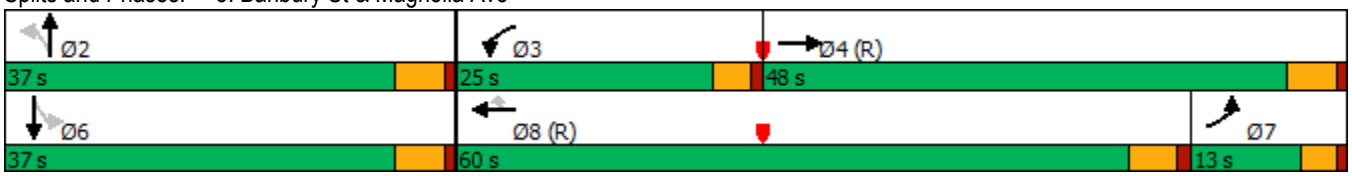


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	23.0	23.0	36.0	36.0		36.0	36.0	
Total Split (s)	13.0	48.0		25.0	60.0	60.0	37.0	37.0		37.0	37.0	
Total Split (%)	11.8%	43.6%		22.7%	54.5%	54.5%	33.6%	33.6%		33.6%	33.6%	
Maximum Green (s)	9.0	43.0		21.0	55.0	55.0	32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		11.0			11.0	11.0				24.0	24.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	8.6	49.7		14.3	57.6	57.6	32.0	32.0		32.0	32.0	
Actuated g/C Ratio	0.08	0.45		0.13	0.52	0.52	0.29	0.29		0.29	0.29	
v/c Ratio	0.33	0.49		0.63	0.49	0.02	0.12	0.19		0.03	0.05	
Control Delay	35.9	3.9		43.2	32.8	2.8	29.8	9.0		28.4	11.8	
Queue Delay	0.0	0.0		0.0	0.6	0.0	0.0	0.0		0.0	0.0	
Total Delay	35.9	3.9		43.2	33.4	2.8	29.8	9.0		28.4	11.8	
LOS	D	A		D	C	A	C	A		C	B	
Approach Delay		5.2			34.4			15.6			16.7	
Approach LOS		A			C			B			B	
Queue Length 50th (ft)	32	13		105	343	0	24	7		6	1	
Queue Length 95th (ft)	m69	177		169	407	m3	54	47		20	22	
Internal Link Dist (ft)		467			466			252			225	
Turn Bay Length (ft)	155			140			50			100		
Base Capacity (vph)	144	2288		337	1853	862	400	533		374	484	
Starvation Cap Reductn	0	0		0	529	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.49		0.43	0.69	0.02	0.12	0.19		0.03	0.05	

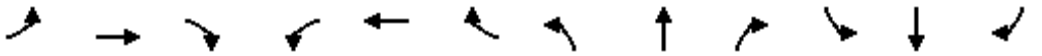
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 51.2%		ICU Level of Service A	
Analysis Period (min) 15			

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

Splits and Phases: 3: Banbury St & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	692	295	279	583	160	327	735	328	231	648	177
Future Volume (vph)	183	692	295	279	583	160	327	735	328	231	648	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	130		100	150		0	245		0	170		160
Storage Lanes	2		1	2		0	2		1	2		1
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	1.00	0.97	0.91	1.00
Frt			0.850		0.968				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	4923	0	3433	5085	1583	3433	5085	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	4923	0	3433	5085	1583	3433	5085	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109		68				99			119
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		704			440			651			1448	
Travel Time (s)		12.0			7.5			11.1			24.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	187	706	301	285	595	163	334	750	335	236	661	181
Shared Lane Traffic (%)												
Lane Group Flow (vph)	187	706	301	285	758	0	334	750	335	236	661	181
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8		5	2	3	1	6	7
Permitted Phases			4						2			6



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	5	3	8		5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.0	43.0	11.0	11.0	43.0		11.0	40.0	11.0	11.0	43.0	11.0
Total Split (s)	12.0	43.0	12.0	12.0	43.0		12.0	41.0	12.0	14.0	43.0	12.0
Total Split (%)	10.9%	39.1%	10.9%	10.9%	39.1%		10.9%	37.3%	10.9%	12.7%	39.1%	10.9%
Maximum Green (s)	8.0	38.0	8.0	8.0	38.0		8.0	36.0	8.0	10.0	38.0	8.0
Yellow Time (s)	3.0	4.0	3.0	3.0	4.0		3.0	4.0	3.0	3.0	4.0	3.0
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	0.0	0.0
Total Lost Time (s)	4.0	5.0	4.0	4.0	5.0		4.0	5.0	4.0	4.0	5.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag		Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		31.0			31.0			28.0			31.0	
Pedestrian Calls (#/hr)		5			5			5			5	
Act Effct Green (s)	10.0	41.8	65.7	8.0	39.8		18.9	32.3	41.3	9.9	23.3	34.3
Actuated g/C Ratio	0.09	0.38	0.60	0.07	0.36		0.17	0.29	0.38	0.09	0.21	0.31
v/c Ratio	0.60	0.37	0.30	1.14	0.42		0.57	0.50	0.51	0.76	0.61	0.31
Control Delay	86.1	5.1	0.9	133.5	7.7		37.9	23.4	9.6	52.6	34.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.1	5.1	0.9	133.5	7.7		37.9	23.4	9.6	52.6	34.2	9.0
LOS	F	A	A	F	A		D	C	A	D	C	A
Approach Delay		16.7			42.1			23.6			34.0	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)	72	23	0	~123	34		114	173	44	86	170	54
Queue Length 95th (ft)	#125	39	9	#211	42		#241	109	86	#143	192	94
Internal Link Dist (ft)		624			360			571			1368	
Turn Bay Length (ft)	130		100	150			245			170		160
Base Capacity (vph)	313	1932	990	249	1823		591	1664	655	312	1756	575
Starvation Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.37	0.30	1.14	0.42		0.57	0.45	0.51	0.76	0.38	0.31

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 13 (12%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay: 28.3		Intersection LOS: C	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

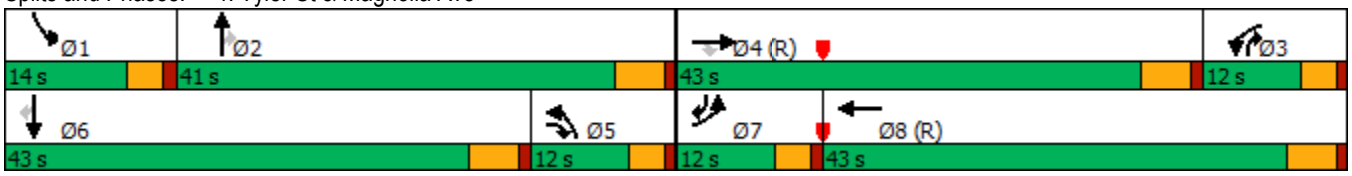
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

Splits and Phases: 4: Tyler St & Magnolia Ave



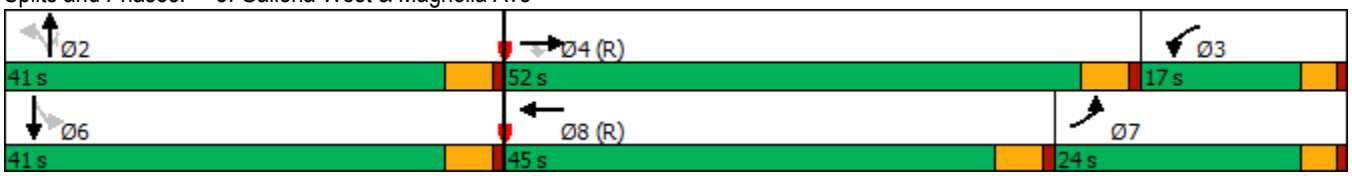
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	948	205	50	858	41	93	8	70	62	16	97
Future Volume (vph)	112	948	205	50	858	41	93	8	70	62	16	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	80		175	125		0	0		75	0		0
Storage Lanes	1		1	1		0	1		1	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.925	
Flt Protected	0.950			0.950			0.950				0.983	
Satd. Flow (prot)	1770	5085	1583	1770	5050	0	1770	1863	1583	0	1694	0
Flt Permitted	0.950			0.950			0.477				0.880	
Satd. Flow (perm)	1770	5085	1583	1770	5050	0	889	1863	1583	0	1516	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			225		7				109		61	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		440			380			353			241	
Travel Time (s)		7.5			6.5			9.6			6.6	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	123	1042	225	55	943	45	102	9	77	68	18	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	1042	225	55	988	0	102	9	77	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases			4				2		2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8		2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	30.0	30.0	11.0	23.0		36.0	36.0	36.0	12.0	12.0	
Total Split (s)	24.0	52.0	52.0	17.0	45.0		41.0	41.0	41.0	41.0	41.0	
Total Split (%)	21.8%	47.3%	47.3%	15.5%	40.9%		37.3%	37.3%	37.3%	37.3%	37.3%	
Maximum Green (s)	20.0	47.0	47.0	13.0	40.0		36.0	36.0	36.0	36.0	36.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	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)	4.0	5.0	5.0	4.0	5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0		7.0	7.0	7.0			
Flash Dont Walk (s)		18.0	18.0		11.0		24.0	24.0	24.0			
Pedestrian Calls (#/hr)		5	5		5		5	5	5			
Act Effct Green (s)	14.9	72.0	72.0	9.1	64.0		17.1	17.1	17.1		17.1	
Actuated g/C Ratio	0.14	0.65	0.65	0.08	0.58		0.16	0.16	0.16		0.16	
v/c Ratio	0.51	0.31	0.20	0.38	0.34		0.74	0.03	0.23		0.67	
Control Delay	41.5	9.7	2.9	49.1	0.9		71.6	33.9	4.0		39.7	
Queue Delay	0.0	0.1	0.0	0.0	0.0		0.0	0.0	0.0		0.0	
Total Delay	41.5	9.8	2.9	49.1	0.9		71.6	33.9	4.0		39.7	
LOS	D	A	A	D	A		E	C	A		D	
Approach Delay		11.5			3.4			42.1			39.7	
Approach LOS		B			A			D			D	
Queue Length 50th (ft)	76	100	8	41	4		71	6	0		90	
Queue Length 95th (ft)	m124	134	m16	86	6		112	17	18		142	
Internal Link Dist (ft)		360			300			273			161	
Turn Bay Length (ft)	80		175	125					75			
Base Capacity (vph)	321	3328	1114	209	2941		290	609	591		537	
Starvation Cap Reductn	0	927	0	0	118		0	0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0	0		0	
Reduced v/c Ratio	0.38	0.43	0.20	0.26	0.35		0.35	0.01	0.13		0.36	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 12.5 Intersection LOS: B
Intersection Capacity Utilization 52.7% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Galleria West & Magnolia Ave

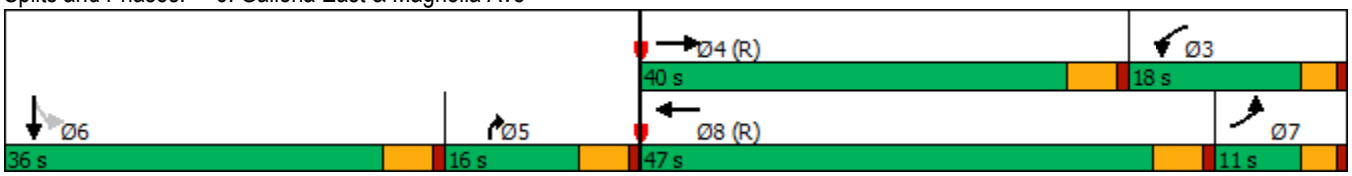


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	1020	41	104	947	22	0	0	122	20	0	35
Future Volume (vph)	31	1020	41	104	947	22	0	0	122	20	0	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		165	130		0	0		0	0		0
Storage Lanes	1		1	1		0	0		2	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	0.91	1.00	1.00	0.88	1.00	1.00	1.00
Frt			0.850		0.997				0.850		0.914	
Flt Protected	0.950			0.950							0.982	
Satd. Flow (prot)	1770	5085	1583	1770	5070	0	0	0	2787	0	1672	0
Flt Permitted	0.950			0.950							0.982	
Satd. Flow (perm)	1770	5085	1583	1770	5070	0	0	0	2787	0	1672	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			208		3						159	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		380			506			335			173	
Travel Time (s)		6.5			8.6			9.1			4.7	
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
Adj. Flow (vph)	33	1074	43	109	997	23	0	0	128	21	0	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	1074	43	109	1020	0	0	0	128	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2				1	1	2	
Detector Template	Left	Thru	Right	Left	Thru				Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100				20	20	100	
Trailing Detector (ft)	0	0	0	0	0				0	0	0	
Detector 1 Position(ft)	0	0	0	0	0				0	0	0	
Detector 1 Size(ft)	20	6	20	20	6				20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0	
Detector 2 Position(ft)		94			94						94	
Detector 2 Size(ft)		6			6						6	
Detector 2 Type		Cl+Ex			Cl+Ex						Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0						0.0	
Turn Type	Prot	NA	Free	Prot	NA				Prot	Perm	NA	
Protected Phases	7	4		3	8				5		6	
Permitted Phases			Free							6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8				5	6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0				7.0	7.0	7.0	
Minimum Split (s)	11.0	23.0		11.0	19.0				12.0	36.0	36.0	
Total Split (s)	11.0	40.0		18.0	47.0				16.0	36.0	36.0	
Total Split (%)	10.0%	36.4%		16.4%	42.7%				14.5%	32.7%	32.7%	
Maximum Green (s)	7.0	35.0		14.0	42.0				11.0	31.0	31.0	
Yellow Time (s)	3.0	4.0		3.0	4.0				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	
Total Lost Time (s)	4.0	5.0		4.0	5.0				5.0		5.0	
Lead/Lag	Lag	Lead		Lag	Lead				Lag	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0				3.0	3.0	3.0	
Recall Mode	None	C-Max		None	C-Max				None	Max	Max	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Dont Walk (s)		11.0			7.0					24.0	24.0	
Pedestrian Calls (#/hr)		5			5					5	5	
Act Effct Green (s)	7.0	36.3	110.0	11.9	45.6				9.7		33.1	
Actuated g/C Ratio	0.06	0.33	1.00	0.11	0.41				0.09		0.30	
v/c Ratio	0.29	0.64	0.03	0.57	0.49				0.52		0.09	
Control Delay	39.7	29.5	0.0	46.4	7.6				55.4		0.3	
Queue Delay	0.0	0.3	0.0	0.0	0.0				0.0		0.0	
Total Delay	39.7	29.8	0.0	46.4	7.6				55.4		0.3	
LOS	D	C	A	D	A				E		A	
Approach Delay		29.0			11.3			55.4			0.3	
Approach LOS		C			B			E			A	
Queue Length 50th (ft)	23	235	0	82	40				49		0	
Queue Length 95th (ft)	53	139	0	141	47				83		0	
Internal Link Dist (ft)		300			426			255			93	
Turn Bay Length (ft)	100		165	130								
Base Capacity (vph)	112	1675	1583	225	2102				278		614	
Starvation Cap Reductn	0	163	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	0.29	0.71	0.03	0.48	0.49				0.46		0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 1 (1%), Referenced to phase 4:EBT and 8:WBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 21.6		Intersection LOS: C	
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Galleria East & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	1047	33	173	878	427	55	80	123	549	117	63
Future Volume (vph)	66	1047	33	173	878	427	55	80	123	549	117	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	150		110	0		0	100		0
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	0.97	0.91	0.91	0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.995				0.850		0.909			0.947	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5060	0	3433	5085	1583	1770	1693	0	3433	1764	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5060	0	3433	5085	1583	1770	1693	0	3433	1764	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				335		59			26	
Link Speed (mph)		40			45			40			40	
Link Distance (ft)		506			714			431			1963	
Travel Time (s)		8.6			10.8			7.3			33.5	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	70	1114	35	184	934	454	59	85	131	584	124	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	1149	0	184	934	454	59	216	0	584	191	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane											Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases						8						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	26.0		11.0	33.0	33.0	12.0	12.0		40.0	40.0	
Total Split (s)	11.0	36.0		13.0	38.0	38.0	21.0	21.0		40.0	40.0	
Total Split (%)	10.0%	32.7%		11.8%	34.5%	34.5%	19.1%	19.1%		36.4%	36.4%	
Maximum Green (s)	7.0	31.0		9.0	33.0	33.0	16.0	16.0		35.0	35.0	
Yellow Time (s)	3.0	4.0		3.0	4.0	4.0	4.0	4.0		4.0	4.0	
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)	4.0	5.0		4.0	5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag		Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	Max	Max		None	None	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		14.0			21.0	21.0				28.0	28.0	
Pedestrian Calls (#/hr)		5			5	5				5	5	
Act Effct Green (s)	7.0	38.8		10.1	44.1	44.1	16.0	16.0		26.1	26.1	
Actuated g/C Ratio	0.06	0.35		0.09	0.40	0.40	0.15	0.15		0.24	0.24	
v/c Ratio	0.32	0.64		0.58	0.46	0.54	0.23	0.73		0.72	0.44	
Control Delay	23.5	4.9		55.7	26.8	10.6	44.2	47.9		23.9	14.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	23.5	4.9		55.7	26.8	10.6	44.2	47.9		23.9	14.6	
LOS	C	A		E	C	B	D	D		C	B	
Approach Delay		6.0			25.5			47.1			21.6	
Approach LOS		A			C			D			C	
Queue Length 50th (ft)	23	36		64	179	55	37	107		105	32	
Queue Length 95th (ft)	m37	135		#104	253	178	77	#213		110	57	
Internal Link Dist (ft)		426			634			351			1883	
Turn Bay Length (ft)	125			150		110				100		
Base Capacity (vph)	218	1786		321	2039	835	257	296		1092	579	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.32	0.64		0.57	0.46	0.54	0.23	0.73		0.53	0.33	

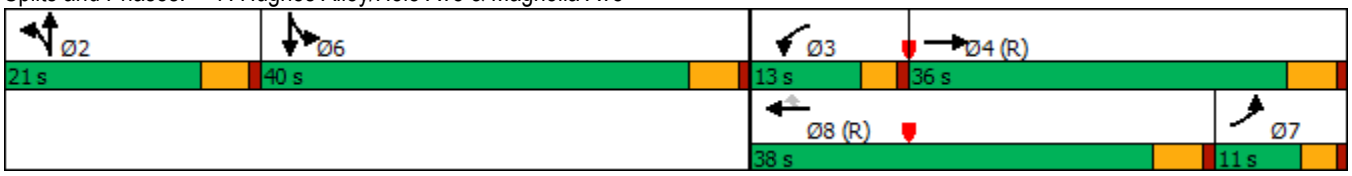
Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 14 (13%), Referenced to phase 4:EBT and 8:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 20.1 Intersection LOS: C
Intersection Capacity Utilization 70.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.

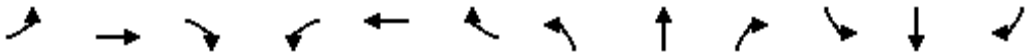
Queue shown is maximum after two cycles.

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

Splits and Phases: 7: Hughes Alley/Hole Ave & Magnolia Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	370	253	158	419	225	314	581	103	145	585	67
Future Volume (vph)	91	370	253	158	419	225	314	581	103	145	585	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	130		130	130		0	100		0
Storage Lanes	1		1	1		1	2		1	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00	1.00	0.91	0.91
Frt			0.850			0.850			0.850		0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5009	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	3539	1583	1770	5009	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			269			142			159		17	
Link Speed (mph)		40			40			40			40	
Link Distance (ft)		702			1963			1448			757	
Travel Time (s)		12.0			33.5			24.7			12.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	97	394	269	168	446	239	334	618	110	154	622	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	97	394	269	168	446	239	334	618	110	154	693	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			

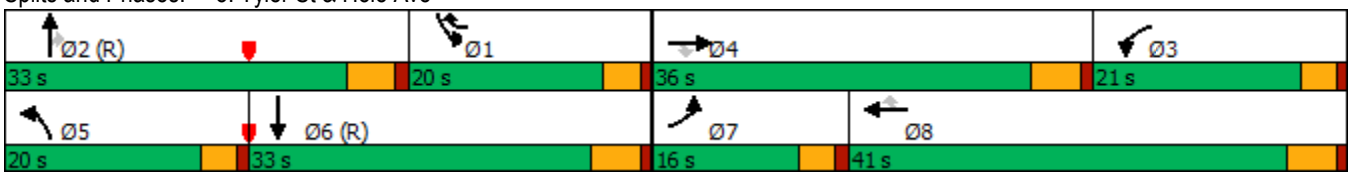


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.0	36.0	36.0	11.0	33.0	11.0	11.0	33.0	33.0	11.0	33.0	
Total Split (s)	16.0	36.0	36.0	21.0	41.0	20.0	20.0	33.0	33.0	20.0	33.0	
Total Split (%)	14.5%	32.7%	32.7%	19.1%	37.3%	18.2%	18.2%	30.0%	30.0%	18.2%	30.0%	
Maximum Green (s)	12.0	31.0	31.0	17.0	36.0	16.0	16.0	28.0	28.0	16.0	28.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	3.0	3.0	4.0	4.0	3.0	4.0	
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	0.0	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	4.0	4.0	5.0	5.0	4.0	5.0	
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	
Walk Time (s)		7.0	7.0		7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		24.0	24.0		21.0			21.0	21.0		21.0	
Pedestrian Calls (#/hr)		5	5		5			5	5		5	
Act Effct Green (s)	10.4	20.1	20.1	14.8	24.5	41.5	15.1	41.2	41.2	16.0	42.1	
Actuated g/C Ratio	0.09	0.18	0.18	0.13	0.22	0.38	0.14	0.37	0.37	0.15	0.38	
v/c Ratio	0.58	0.61	0.53	0.71	0.57	0.35	0.71	0.47	0.16	0.60	0.36	
Control Delay	61.7	44.7	8.0	56.6	35.8	4.1	46.0	16.0	2.0	54.6	26.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	61.7	44.7	8.0	56.6	35.8	4.1	46.0	16.0	2.0	54.6	26.4	
LOS	E	D	A	E	D	A	D	B	A	D	C	
Approach Delay		33.9			31.0			24.0			31.6	
Approach LOS		C			C			C			C	
Queue Length 50th (ft)	66	138	0	112	135	18	51	35	0	103	123	
Queue Length 95th (ft)	121	163	61	m187	173	m34	146	255	m23	173	192	
Internal Link Dist (ft)		622			1883			1368			677	
Turn Bay Length (ft)	100		100	130		130	130			100		
Base Capacity (vph)	193	997	639	276	1158	685	509	1324	691	257	1926	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.50	0.40	0.42	0.61	0.39	0.35	0.66	0.47	0.16	0.60	0.36	

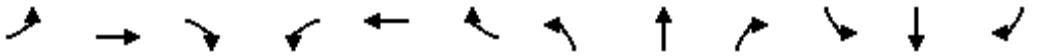
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 19 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 29.6		Intersection LOS: C	
Intersection Capacity Utilization 58.1%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 8: Tyler St & Hole Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	10	27	127	6	38	93	1275	99	69	1116	28
Future Volume (vph)	42	10	27	127	6	38	93	1275	99	69	1116	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		115	215		0	170		0
Storage Lanes	0		0	1		1	1		0	2		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.86	0.86	0.97	0.91	0.91
Frt		0.953				0.850		0.989			0.996	
Flt Protected		0.974		0.950			0.950			0.950		
Satd. Flow (prot)	0	1729	0	1770	1863	1583	1770	6337	0	3433	5065	0
Flt Permitted		0.847		0.716			0.950			0.950		
Satd. Flow (perm)	0	1504	0	1334	1863	1583	1770	6337	0	3433	5065	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28				109		19			4	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		221			241			548			651	
Travel Time (s)		6.0			6.6			9.3			11.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	43	10	28	131	6	39	96	1314	102	71	1151	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	131	6	39	96	1416	0	71	1180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Prot	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8						

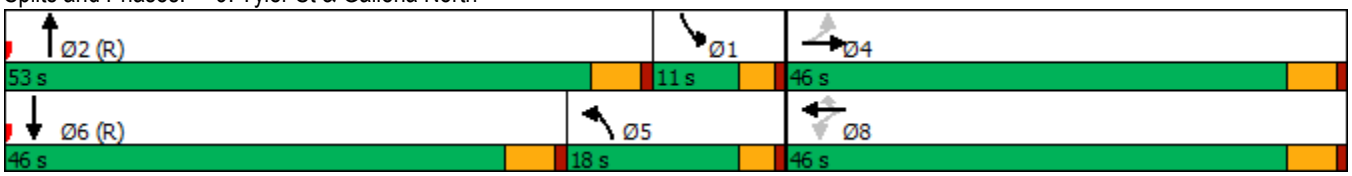


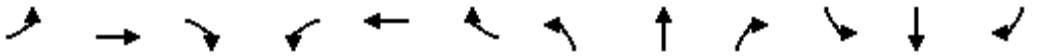
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	40.0	40.0		43.0	43.0	43.0	11.0	30.0		11.0	23.0	
Total Split (s)	46.0	46.0		46.0	46.0	46.0	18.0	53.0		11.0	46.0	
Total Split (%)	41.8%	41.8%		41.8%	41.8%	41.8%	16.4%	48.2%		10.0%	41.8%	
Maximum Green (s)	41.0	41.0		41.0	41.0	41.0	14.0	48.0		7.0	41.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	3.0	4.0		3.0	4.0	
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	
Total Lost Time (s)		5.0		5.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag							Lag	Lead		Lag	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		7.0			7.0	
Flash Dont Walk (s)	28.0	28.0		31.0	31.0	31.0		18.0			11.0	
Pedestrian Calls (#/hr)	5	5		5	5	5		5			5	
Act Effct Green (s)		19.1		19.1	19.1	19.1	12.6	72.1		7.0	66.5	
Actuated g/C Ratio		0.17		0.17	0.17	0.17	0.11	0.66		0.06	0.60	
v/c Ratio		0.29		0.57	0.02	0.11	0.48	0.34		0.33	0.39	
Control Delay		26.1		48.9	30.5	0.6	43.5	1.5		52.7	3.0	
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		26.1		48.9	30.5	0.6	43.5	1.5		52.7	3.0	
LOS		C		D	C	A	D	A		D	A	
Approach Delay		26.1			37.5			4.2			5.8	
Approach LOS		C			D			A			A	
Queue Length 50th (ft)		34		89	4	0	71	12		27	18	
Queue Length 95th (ft)		60		118	12	0	m125	13		m45	m115	
Internal Link Dist (ft)		141			161			468			571	
Turn Bay Length (ft)						115	215			170		
Base Capacity (vph)		578		497	694	658	225	4160		218	3063	
Starvation Cap Reductn		0		0	0	0	0	0		0	0	
Spillback Cap Reductn		0		0	0	0	0	0		0	0	
Storage Cap Reductn		0		0	0	0	0	0		0	0	
Reduced v/c Ratio		0.14		0.26	0.01	0.06	0.43	0.34		0.33	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 58 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

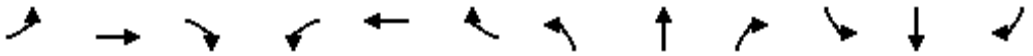
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tyler St & Galleria North





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	75	226	273	45	66	301	1199	151	76	1086	155
Future Volume (vph)	216	75	226	273	45	66	301	1199	151	76	1086	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		50	240		0	155		0
Storage Lanes	1		1	1		1	2		0	1		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.86	0.86	1.00	0.86	0.86
Frt			0.850			0.850		0.983			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	3433	1863	1583	3433	6299	0	1770	6286	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	3433	1863	1583	3433	6299	0	1770	6286	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			235			149		28			30	
Link Speed (mph)		25			25			40			40	
Link Distance (ft)		267			252			595			487	
Travel Time (s)		7.3			6.9			10.1			8.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	225	78	235	284	47	69	314	1249	157	79	1131	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	78	235	284	47	69	314	1406	0	79	1292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						



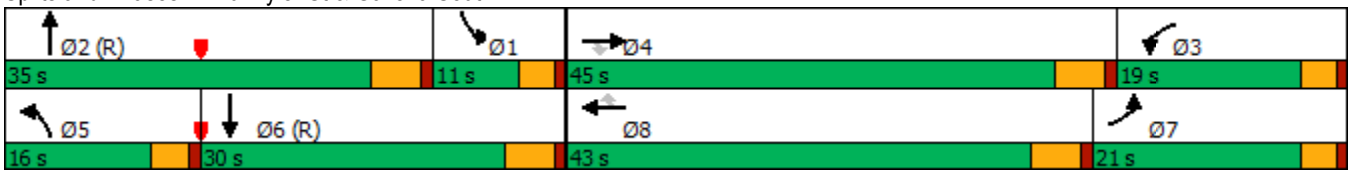
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	11.0	12.0	12.0	11.0	43.0	43.0	11.0	26.0		11.0	30.0	
Total Split (s)	21.0	45.0	45.0	19.0	43.0	43.0	16.0	35.0		11.0	30.0	
Total Split (%)	19.1%	40.9%	40.9%	17.3%	39.1%	39.1%	14.5%	31.8%		10.0%	27.3%	
Maximum Green (s)	17.0	40.0	40.0	15.0	38.0	38.0	12.0	30.0		7.0	25.0	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0		3.0	4.0	
All-Red Time (s)	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	0.0	
Total Lost Time (s)	4.0	5.0	5.0	4.0	5.0	5.0	4.0	5.0		4.0	5.0	
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	
Walk Time (s)					7.0	7.0		7.0			7.0	
Flash Dont Walk (s)					31.0	31.0		14.0			18.0	
Pedestrian Calls (#/hr)					5	5		5			5	
Act Effct Green (s)	20.0	10.5	10.5	21.0	13.9	13.9	14.3	55.7		7.0	46.2	
Actuated g/C Ratio	0.18	0.10	0.10	0.19	0.13	0.13	0.13	0.51		0.06	0.42	
v/c Ratio	0.70	0.44	0.65	0.43	0.20	0.21	0.70	0.44		0.71	0.49	
Control Delay	55.5	53.8	14.6	39.6	40.5	1.4	55.3	20.5		57.7	8.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	55.5	53.8	14.6	39.6	40.5	1.4	55.3	20.5		57.7	8.2	
LOS	E	D	B	D	D	A	E	C		E	A	
Approach Delay		37.4			33.2			26.8			11.1	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	150	53	0	94	32	0	108	169		50	41	
Queue Length 95th (ft)	#283	97	71	104	49	0	#186	309		#127	#162	
Internal Link Dist (ft)		187			172			515			407	
Turn Bay Length (ft)				150		50	240			155		
Base Capacity (vph)	321	677	725	683	643	644	447	3203		112	2657	
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.70	0.12	0.32	0.42	0.07	0.11	0.70	0.44		0.71	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 76 (69%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

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

Queue shown is maximum after two cycles.

Splits and Phases: 10: Tyler St & Galleria South



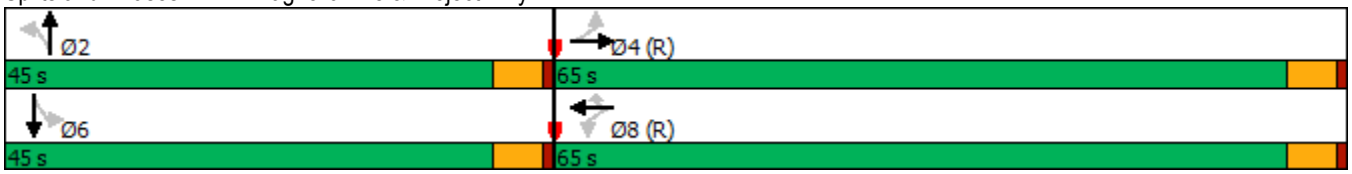
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1060	10	10	961	136	10	0	10	128	0	76
Future Volume (vph)	75	1060	10	10	961	136	10	0	10	128	0	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		100	0		0	0		0
Storage Lanes	1		0	1		1	0		0	0		0
Taper Length (ft)	60			60			60			60		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999				0.850		0.932			0.950	
Flt Protected	0.950			0.950				0.976			0.970	
Satd. Flow (prot)	1770	5080	0	1770	5085	1583	0	1694	0	0	1717	0
Flt Permitted	0.242			0.207				0.874			0.796	
Satd. Flow (perm)	451	5080	0	386	5085	1583	0	1517	0	0	1409	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				139		20			30	
Link Speed (mph)		40			40			30			25	
Link Distance (ft)		546			704			319			334	
Travel Time (s)		9.3			12.0			7.3			9.1	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.97	0.97	0.92	0.92	0.92	0.97	0.92	0.97
Adj. Flow (vph)	77	1093	11	11	991	140	11	0	11	132	0	78
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	1104	0	11	991	140	0	22	0	0	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	23.0	23.0		19.0	19.0	19.0	40.0	40.0		36.0	36.0	
Total Split (s)	65.0	65.0		65.0	65.0	65.0	45.0	45.0		45.0	45.0	
Total Split (%)	59.1%	59.1%		59.1%	59.1%	59.1%	40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	60.0	60.0		60.0	60.0	60.0	40.0	40.0		40.0	40.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
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	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0		5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max	C-Max	None	None		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0	7.0	28.0	28.0		24.0	24.0	
Pedestrian Calls (#/hr)	5	5		5	5	5	5	5		5	5	
Act Effct Green (s)	60.0	60.0		60.0	60.0	60.0		40.0			40.0	
Actuated g/C Ratio	0.55	0.55		0.55	0.55	0.55		0.36			0.36	
v/c Ratio	0.31	0.40		0.05	0.36	0.15		0.04			0.40	
Control Delay	27.3	25.6		7.2	9.4	1.8		10.2			24.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Total Delay	27.3	25.6		7.2	9.4	1.8		10.2			24.8	
LOS	C	C		A	A	A		B			C	
Approach Delay		25.7			8.4			10.2			24.8	
Approach LOS		C			A			B			C	
Queue Length 50th (ft)	53	291		3	122	10		1			93	
Queue Length 95th (ft)	107	335		m3	50	3		18			159	
Internal Link Dist (ft)		466			624			239			254	
Turn Bay Length (ft)	100			100		100						
Base Capacity (vph)	246	2771		210	2773	926		564			531	
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	0.31	0.40		0.05	0.36	0.15		0.04			0.40	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 55.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Magnolia Ave & Project Dwy



APPENDIX C

SIMTRAFFIC QUEUEING WORKSHEETS

APPENDIX C-I

EXISTING TRAFFIC CONDITIONS

Queuing and Blocking Report

Intersection: 1: Polk St & Magnolia Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	TR
Maximum Queue (ft)	187	221	248	130	113	120	86	108	118	112	189
Average Queue (ft)	79	111	112	61	46	53	31	46	48	55	66
95th Queue (ft)	149	192	203	118	96	97	74	93	94	97	136
Link Distance (ft)		600	600		524	524		473		491	491
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	195			225			80		100		
Storage Blk Time (%)	0	0					1	3	1	2	
Queuing Penalty (veh)	1	0					1	1	1	1	

Intersection: 2: Shopping Center Dwy & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	TR	L	R	R
Maximum Queue (ft)	51	83	67	75	133	57	47	38	31	12
Average Queue (ft)	12	28	13	14	54	18	11	5	6	1
95th Queue (ft)	41	68	44	45	105	45	35	25	25	9
Link Distance (ft)		283	283	283		462	462	245	245	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	225				215					
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 3: Banbury St & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	L	TR	TR
Maximum Queue (ft)	63	49	16	55	107	163	168	71	68	17
Average Queue (ft)	24	12	1	10	41	81	88	27	32	1
95th Queue (ft)	57	39	8	39	86	134	144	65	60	11
Link Distance (ft)		462	462	462		483	483		274	246
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	155				140			50		
Storage Blk Time (%)						0		7	2	
Queuing Penalty (veh)						0		6	1	

Queuing and Blocking Report

Intersection: 4: Tyler St & Magnolia Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	91	107	97	106	100	60	102	117	86	90	36	126
Average Queue (ft)	33	50	28	24	27	13	31	56	17	15	6	60
95th Queue (ft)	73	95	70	70	73	41	79	106	56	56	24	117
Link Distance (ft)			600	600	600				320	320	320	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130	130				100	150	150				245
Storage Blk Time (%)		0	0		0	0			0			
Queuing Penalty (veh)		0	0		0	0			0			

Intersection: 4: Tyler St & Magnolia Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	
Directions Served	L	T	T	T	R	L	L	T	T	T	R	
Maximum Queue (ft)	152	228	209	184	96	37	64	140	156	159	82	
Average Queue (ft)	75	134	121	95	40	7	21	78	88	87	34	
95th Queue (ft)	130	205	193	163	82	26	52	130	141	137	68	
Link Distance (ft)		526	526	526	526			1278	1278	1278		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	245					170	170				160	
Storage Blk Time (%)		0						0		0		
Queuing Penalty (veh)		0						0		0		

Queuing and Blocking Report

Intersection: 5: Galleria West & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (ft)	66	107	134	145	28	78	53	33	28	10	5	21
Average Queue (ft)	22	11	19	38	3	22	4	2	1	0	0	5
95th Queue (ft)	51	55	78	106	17	58	24	13	13	5	3	19
Link Distance (ft)		320	320	320			305	305	305	278	278	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80				175	125						75
Storage Blk Time (%)	0	1		0								
Queuing Penalty (veh)	0	0		0								

Intersection: 5: Galleria West & Magnolia Ave

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	52
Average Queue (ft)	12
95th Queue (ft)	40
Link Distance (ft)	176
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Galleria East & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	T	L	T	T	TR	R	LTR
Maximum Queue (ft)	33	131	159	170	48	158	120	95	48	33
Average Queue (ft)	7	28	47	76	13	60	25	19	9	3
95th Queue (ft)	26	78	111	134	40	129	81	61	34	20
Link Distance (ft)		305	305	305		366	366	366	271	108
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	100				130					
Storage Blk Time (%)		1		1		1				
Queuing Penalty (veh)		0		0		0				

Queuing and Blocking Report

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	10	39	33	9	18	8	59	189	114	58	65	38
Average Queue (ft)	2	6	5	0	1	0	18	76	19	10	19	8
95th Queue (ft)	8	23	22	4	8	4	46	148	69	35	45	29
Link Distance (ft)			366	366	366			674	674	674		366
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	125	125				150	150				110	
Storage Blk Time (%)								1			0	
Queuing Penalty (veh)								0			0	

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	NB	SB	SB	SB
Directions Served	TR	L	L	TR
Maximum Queue (ft)	54	149	177	53
Average Queue (ft)	17	50	83	15
95th Queue (ft)	43	117	144	41
Link Distance (ft)	366		1742	1742
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)		0	4	
Queuing Penalty (veh)		0	5	

Queuing and Blocking Report

Intersection: 8: Tyler St & Hole Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	70	161	112	28	40	56	68	15	100	112	127	144
Average Queue (ft)	12	69	18	2	5	10	17	1	19	42	33	60
95th Queue (ft)	43	130	76	12	23	34	46	9	66	93	92	115
Link Distance (ft)		582	582			1742	1742				1278	1278
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			100	130			130	130	130		
Storage Blk Time (%)	0	4	0						0	0	0	
Queuing Penalty (veh)	0	1	0						0	1	0	

Intersection: 8: Tyler St & Hole Ave

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	TR
Maximum Queue (ft)	124	89	153	133	120
Average Queue (ft)	5	26	61	29	36
95th Queue (ft)	49	68	124	84	89
Link Distance (ft)	1278		646	646	646
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		1	3		
Queuing Penalty (veh)		1	2		

Queuing and Blocking Report

Intersection: 9: Tyler St & Galleria North

Movement	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	T	R	L	T	T	T	TR	L	L	T
Maximum Queue (ft)	56	81	24	31	119	168	113	88	123	9	48	186
Average Queue (ft)	9	24	2	7	42	47	31	17	28	0	8	55
95th Queue (ft)	36	61	14	28	93	127	89	59	83	5	29	155
Link Distance (ft)	157	164	164			474	474	474	474			526
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				115	215					170	170	
Storage Blk Time (%)						0						0
Queuing Penalty (veh)						0						0

Intersection: 9: Tyler St & Galleria North

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	196	214
Average Queue (ft)	63	68
95th Queue (ft)	171	183
Link Distance (ft)	526	526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 10: Tyler St & Galleria South

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	R	L	T	L	L	T	T	T	TR	L
Maximum Queue (ft)	92	35	31	91	35	252	293	344	222	106	140	61
Average Queue (ft)	34	5	16	31	6	154	202	93	40	18	30	14
95th Queue (ft)	74	23	41	71	25	256	285	241	129	62	94	42
Link Distance (ft)	189	189	189	176	176			540	540	540	540	
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								0				
Storage Bay Dist (ft)						240	240					155
Storage Blk Time (%)					0	0	4	0				
Queuing Penalty (veh)					0	0	10	1				

Intersection: 10: Tyler St & Galleria South

Movement	SB	SB	SB	SB
Directions Served	T	T	T	TR
Maximum Queue (ft)	120	125	117	118
Average Queue (ft)	19	19	30	24
95th Queue (ft)	74	78	86	81
Link Distance (ft)	410	410	410	410
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 11: Magnolia Ave & Project Dwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	31
Average Queue (ft)	8
95th Queue (ft)	30
Link Distance (ft)	270
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 36

Queuing and Blocking Report

Intersection: 1: Polk St & Magnolia Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	TR
Maximum Queue (ft)	222	370	358	129	214	247	140	340	139	98	140
Average Queue (ft)	145	160	159	56	102	110	91	173	67	37	54
95th Queue (ft)	219	285	271	108	179	194	159	300	119	77	103
Link Distance (ft)		600	600		524	524		473		491	491
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	195			225			80		100		
Storage Blk Time (%)	4	2			0		13	35	5	0	
Queuing Penalty (veh)	17	3			0		32	43	1	0	

Intersection: 2: Shopping Center Dwy & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	TR	L	R	R
Maximum Queue (ft)	54	113	78	128	141	82	84	98	78	35
Average Queue (ft)	16	42	29	53	62	22	25	34	34	6
95th Queue (ft)	43	89	62	105	121	58	64	79	66	27
Link Distance (ft)		283	283	283		462	462	245	245	195
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	225				215					
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 3: Banbury St & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	108	73	59	102	196	278	293	28	87	120	37	43
Average Queue (ft)	38	30	9	41	97	155	172	4	33	44	6	11
95th Queue (ft)	84	67	36	89	176	245	255	20	72	92	24	34
Link Distance (ft)		462	462	462		483	483	483		274		246
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	155				140				50		100	
Storage Blk Time (%)					3	6			8	9		
Queuing Penalty (veh)					12	8			8	4		

Queuing and Blocking Report

Intersection: 4: Tyler St & Magnolia Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	103	101	127	118	156	98	180	209	321	184	110	160
Average Queue (ft)	46	53	56	60	67	17	144	169	155	60	36	73
95th Queue (ft)	87	92	107	110	124	59	218	238	355	144	81	134
Link Distance (ft)			600	600	600				320	320	320	
Upstream Blk Time (%)									7	0		
Queuing Penalty (veh)									25	0		
Storage Bay Dist (ft)	130	130				100	150	150				245
Storage Blk Time (%)		0	0		1	0	9	31	0			
Queuing Penalty (veh)		0	0		3	0	17	58	0			

Intersection: 4: Tyler St & Magnolia Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	
Directions Served	L	T	T	T	R	L	L	T	T	T	R	
Maximum Queue (ft)	205	242	177	134	212	190	194	228	206	198	144	
Average Queue (ft)	86	101	79	45	77	72	101	100	108	113	43	
95th Queue (ft)	151	185	150	107	163	141	168	193	176	178	98	
Link Distance (ft)		526	526	526	526			1278	1278	1278		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	245					170	170				160	
Storage Blk Time (%)	0	0				0	2	0		1		
Queuing Penalty (veh)	0	0				1	5	0		2		

Queuing and Blocking Report

Intersection: 5: Galleria West & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (ft)	136	181	188	172	84	116	157	128	105	159	29	59
Average Queue (ft)	78	66	72	86	36	55	75	25	13	67	4	23
95th Queue (ft)	130	135	135	151	69	131	253	120	69	128	20	47
Link Distance (ft)		320	320	320			305	305	305	278	278	
Upstream Blk Time (%)							10	0	0			
Queuing Penalty (veh)							31	0	0			
Storage Bay Dist (ft)	80				175	125						75
Storage Blk Time (%)	13	2		0		0	14					0
Queuing Penalty (veh)	41	2		0		0	7					0

Intersection: 5: Galleria West & Magnolia Ave

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	190
Average Queue (ft)	98
95th Queue (ft)	171
Link Distance (ft)	176
Upstream Blk Time (%)	2
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Galleria East & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	T	R	L	T	T	TR	R	R	LTR
Maximum Queue (ft)	92	179	209	213	45	167	236	161	156	148	89	90
Average Queue (ft)	28	79	82	109	2	82	121	54	38	86	17	32
95th Queue (ft)	68	148	160	185	32	167	310	174	125	139	68	72
Link Distance (ft)		305	305	305			366	366	366	271	271	108
Upstream Blk Time (%)							4	0	0			0
Queuing Penalty (veh)							12	0	0			0
Storage Bay Dist (ft)	100				165	130						
Storage Blk Time (%)	0	4		2		1	15					
Queuing Penalty (veh)	1	1		1		4	16					

Queuing and Blocking Report

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	50	58	69	106	95	156	210	498	440	249	145	95
Average Queue (ft)	9	12	12	25	25	57	154	296	201	94	66	41
95th Queue (ft)	29	41	44	67	69	137	249	572	495	293	132	82
Link Distance (ft)			366	366	366			674	674	674		366
Upstream Blk Time (%)								9	0	0		
Queuing Penalty (veh)								0	0	0		
Storage Bay Dist (ft)	125	125				150	150				110	
Storage Blk Time (%)		0				0	3	34		2	2	
Queuing Penalty (veh)		0				0	10	58		9	4	

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	NB	SB	SB	SB
Directions Served	TR	L	L	TR
Maximum Queue (ft)	258	159	283	250
Average Queue (ft)	113	104	139	74
95th Queue (ft)	212	182	240	177
Link Distance (ft)	366		1742	1742
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)		12	30	
Queuing Penalty (veh)		34	81	

Queuing and Blocking Report

Intersection: 8: Tyler St & Hole Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	157	190	147	112	158	166	133	73	158	180	245	182
Average Queue (ft)	45	99	53	16	80	63	57	18	71	96	62	74
95th Queue (ft)	109	170	131	64	147	134	115	57	150	169	153	132
Link Distance (ft)		582	582			1742	1742				1278	1278
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			100	130			130	130	130		
Storage Blk Time (%)	1	10	1	0	3	1	0		3	9	0	
Queuing Penalty (veh)	2	9	3	0	6	1	1		8	25	0	

Intersection: 8: Tyler St & Hole Ave

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	159	254	189	184
Average Queue (ft)	75	138	83	79
95th Queue (ft)	156	226	170	157
Link Distance (ft)		646	646	646
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100			
Storage Blk Time (%)	5	18		
Queuing Penalty (veh)	9	27		

Queuing and Blocking Report

Intersection: 9: Tyler St & Galleria North

Movement	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	T	R	L	T	T	T	TR	L	L	T
Maximum Queue (ft)	114	172	44	62	168	176	131	123	156	57	73	53
Average Queue (ft)	53	90	7	25	66	52	28	17	42	16	29	7
95th Queue (ft)	93	155	29	55	128	128	86	67	110	46	59	32
Link Distance (ft)	157	164	164			474	474	474	474			526
Upstream Blk Time (%)	0	1										
Queuing Penalty (veh)	0	0										
Storage Bay Dist (ft)				115	215					170	170	
Storage Blk Time (%)						0						
Queuing Penalty (veh)						0						

Intersection: 9: Tyler St & Galleria North

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	91	110
Average Queue (ft)	29	48
95th Queue (ft)	73	98
Link Distance (ft)	526	526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Intersection: 10: Tyler St & Galleria South

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	R	L	L	T	R	L	L	T	T	T
Maximum Queue (ft)	205	129	147	170	205	124	98	227	299	451	385	198
Average Queue (ft)	135	59	67	67	157	48	14	108	174	210	138	69
95th Queue (ft)	217	108	117	182	217	104	61	210	276	373	298	164
Link Distance (ft)	189	189	189		176	176				540	540	540
Upstream Blk Time (%)	5	0	0	0	8	0				0		
Queuing Penalty (veh)	0	0	0	0	0	0				0		
Storage Bay Dist (ft)				150			50	240	240			
Storage Blk Time (%)				0	14	17	1	0	1	5		
Queuing Penalty (veh)				0	20	11	0	0	3	16		

Intersection: 10: Tyler St & Galleria South

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	T	T	T	TR
Maximum Queue (ft)	275	144	166	172	161	217
Average Queue (ft)	139	61	75	84	86	101
95th Queue (ft)	248	126	141	143	141	182
Link Distance (ft)	540		410	410	410	410
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		155				
Storage Blk Time (%)		2	0			
Queuing Penalty (veh)		4	0			

Intersection: 11: Magnolia Ave & Project Dwy

Movement	SB
Directions Served	R
Maximum Queue (ft)	44
Average Queue (ft)	15
95th Queue (ft)	42
Link Distance (ft)	270
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 700

APPENDIX C-II

ALTERNATIVE 1 – HALF SIGNAL
EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Intersection: 1: Polk St & Magnolia Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	TR
Maximum Queue (ft)	185	253	269	133	113	115	79	120	114	117	156
Average Queue (ft)	81	123	129	62	51	61	30	46	60	49	65
95th Queue (ft)	151	210	225	113	99	103	67	93	102	96	118
Link Distance (ft)		600	600		524	524		473		491	491
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	195			225			80		100		
Storage Blk Time (%)	0	1					1	3	2	1	
Queuing Penalty (veh)	1	1					1	1	1	1	

Intersection: 2: Shopping Center Dwy & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	TR	L	R	R
Maximum Queue (ft)	58	86	55	68	115	75	56	46	31	18
Average Queue (ft)	13	27	10	14	45	21	9	7	7	1
95th Queue (ft)	40	67	35	44	92	53	32	31	28	11
Link Distance (ft)		283	283	283		462	462	245	245	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	225				215					
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 3: Banbury St & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	L	TR	TR
Maximum Queue (ft)	78	69	32	59	164	175	144	71	91	26
Average Queue (ft)	25	18	2	14	69	52	62	25	33	1
95th Queue (ft)	65	52	16	43	128	119	114	64	71	10
Link Distance (ft)		462	462	462		483	483		274	246
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	155				140			50		
Storage Blk Time (%)					1	0		5	2	
Queuing Penalty (veh)					3	0		4	1	

Intersection: 4: Tyler St & Magnolia Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	102	112	93	102	93	53	109	115	90	77	42	185
Average Queue (ft)	32	54	32	29	32	15	29	56	19	15	8	85
95th Queue (ft)	75	96	76	76	75	40	76	99	58	49	30	156
Link Distance (ft)			600	600	600				320	320	320	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130	130				100	150	150				245
Storage Blk Time (%)	0	0			0		0	0				
Queuing Penalty (veh)	0	0			0		0	0				

Intersection: 4: Tyler St & Magnolia Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	
Directions Served	L	T	T	T	R	L	L	T	T	T	R	
Maximum Queue (ft)	193	234	193	181	118	33	65	143	160	165	115	
Average Queue (ft)	91	124	110	91	37	4	24	76	88	83	35	
95th Queue (ft)	163	206	177	158	80	22	57	128	146	138	76	
Link Distance (ft)		526	526	526	526			1278	1278	1278		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	245					170	170				160	
Storage Blk Time (%)	0	0						0		0		
Queuing Penalty (veh)	0	0						0		0		

Intersection: 5: Galleria West & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (ft)	61	120	143	166	43	98	48	12	26	7	9	21
Average Queue (ft)	19	15	22	37	5	29	4	0	2	0	0	6
95th Queue (ft)	48	72	91	117	26	73	25	6	14	4	5	22
Link Distance (ft)		320	320	320			305	305	305	278	278	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80				175	125						75
Storage Blk Time (%)	0	1		1		0						
Queuing Penalty (veh)	1	0		0		0						

Intersection: 5: Galleria West & Magnolia Ave

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	52
Average Queue (ft)	12
95th Queue (ft)	38
Link Distance (ft)	176
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Galleria East & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	T	R	L	T	T	TR	R	LTR
Maximum Queue (ft)	29	134	169	183	44	52	179	110	78	47	34
Average Queue (ft)	5	26	47	74	1	13	59	20	22	10	5
95th Queue (ft)	22	82	117	144	31	39	138	67	60	35	22
Link Distance (ft)		305	305	305			366	366	366	271	108
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100				165	130					
Storage Blk Time (%)		1		1			1				
Queuing Penalty (veh)		0		0			0				

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	11	36	35	16	35	13	66	184	111	73	77	33
Average Queue (ft)	2	5	4	1	2	1	16	80	14	16	23	6
95th Queue (ft)	7	22	20	8	15	6	46	151	59	47	54	26
Link Distance (ft)			366	366	366			674	674	674		366
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	125	125				150	150				110	
Storage Blk Time (%)								1		0	0	
Queuing Penalty (veh)								0		0	0	

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	NB	SB	SB	SB
Directions Served	TR	L	L	TR
Maximum Queue (ft)	56	134	152	52
Average Queue (ft)	18	44	77	13
95th Queue (ft)	45	100	132	40
Link Distance (ft)	366		1742	1742
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)		0	3	
Queuing Penalty (veh)		0	3	

Intersection: 8: Tyler St & Hole Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	62	158	136	56	46	46	55	20	122	132	112	136
Average Queue (ft)	12	73	22	4	9	10	18	1	21	45	37	60
95th Queue (ft)	45	138	90	29	32	33	47	10	74	99	93	116
Link Distance (ft)		582	582			1742	1742				1278	1278
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			100	130			130	130	130		
Storage Blk Time (%)	1	5	0						0	1	0	
Queuing Penalty (veh)	1	2	1						0	3	0	

Intersection: 8: Tyler St & Hole Ave

Movement	NB	SB	SB	SB	SB
Directions Served	R	L	T	T	TR
Maximum Queue (ft)	43	106	153	122	116
Average Queue (ft)	3	23	63	29	36
95th Queue (ft)	45	70	125	82	87
Link Distance (ft)	1278		646	646	646
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		100			
Storage Blk Time (%)		1	2		
Queuing Penalty (veh)		1	2		

Intersection: 9: Tyler St & Galleria North

Movement	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	T	R	L	T	T	T	TR	L	L	T
Maximum Queue (ft)	52	70	35	39	122	177	126	90	102	13	33	201
Average Queue (ft)	12	22	3	7	38	41	25	16	25	1	6	51
95th Queue (ft)	40	58	19	29	91	114	77	57	74	7	23	152
Link Distance (ft)	157	164	164			474	474	474	474			526
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				115	215					170	170	
Storage Blk Time (%)						0						1
Queuing Penalty (veh)						0						0

Intersection: 9: Tyler St & Galleria North

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	222	216
Average Queue (ft)	57	64
95th Queue (ft)	169	181
Link Distance (ft)	526	526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Tyler St & Galleria South

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	R	L	T	L	L	T	T	T	TR	L
Maximum Queue (ft)	94	29	35	76	37	256	289	372	244	90	110	48
Average Queue (ft)	33	3	16	31	6	148	201	98	44	14	31	14
95th Queue (ft)	75	18	41	68	26	248	274	261	147	53	82	38
Link Distance (ft)	189	189	189	176	176			540	540	540	540	
Upstream Blk Time (%)								0				
Queuing Penalty (veh)								0				
Storage Bay Dist (ft)						240	240					155
Storage Blk Time (%)					0	0	3	0				
Queuing Penalty (veh)					0	0	9	2				

Intersection: 10: Tyler St & Galleria South

Movement	SB	SB	SB	SB
Directions Served	T	T	T	TR
Maximum Queue (ft)	114	120	123	134
Average Queue (ft)	22	20	33	28
95th Queue (ft)	76	78	86	91
Link Distance (ft)	410	410	410	410
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 11: Magnolia Ave & Project Dwy

Movement	EB	EB	WB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	R	R
Maximum Queue (ft)	89	26	120	120	31	52	62
Average Queue (ft)	28	1	34	37	2	11	24
95th Queue (ft)	67	19	92	92	17	37	47
Link Distance (ft)		483	600	600	600		256
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100					100	
Storage Blk Time (%)	0						
Queuing Penalty (veh)	1						

Network Summary

Network wide Queuing Penalty: 41

Intersection: 1: Polk St & Magnolia Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	TR
Maximum Queue (ft)	250	333	318	118	212	224	140	373	142	116	144
Average Queue (ft)	151	163	158	50	108	114	92	164	72	35	55
95th Queue (ft)	238	275	270	102	188	194	155	299	124	80	108
Link Distance (ft)		600	600		524	524		473		491	491
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	195			225			80		100		
Storage Blk Time (%)	4	3			0		13	30	7	0	
Queuing Penalty (veh)	15	6			0		35	37	2	0	

Intersection: 2: Shopping Center Dwy & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	TR	L	R	R
Maximum Queue (ft)	62	132	87	139	126	49	59	88	84	35
Average Queue (ft)	17	52	30	54	63	14	16	30	32	6
95th Queue (ft)	47	108	66	113	113	39	45	72	67	27
Link Distance (ft)		283	283	283		462	462	245	245	195
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	225				215					
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 3: Banbury St & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	94	106	132	193	200	413	387	32	76	104	33	39
Average Queue (ft)	38	33	18	64	174	239	216	6	26	42	7	9
95th Queue (ft)	84	84	71	140	230	393	331	24	61	82	25	29
Link Distance (ft)		462	462	462		483	483	483		274		246
Upstream Blk Time (%)						0						
Queuing Penalty (veh)						0						
Storage Bay Dist (ft)	155				140				50		100	
Storage Blk Time (%)					22	9			6	7		
Queuing Penalty (veh)					97	24			6	3		

Intersection: 4: Tyler St & Magnolia Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	147	162	178	124	147	123	180	209	348	285	232	189
Average Queue (ft)	71	83	53	52	60	26	144	173	214	69	60	84
95th Queue (ft)	132	144	118	101	116	76	226	253	438	189	150	156
Link Distance (ft)			600	600	600				320	320	320	
Upstream Blk Time (%)									15	0	0	
Queuing Penalty (veh)									54	1	0	
Storage Bay Dist (ft)	130	130				100	150	150				245
Storage Blk Time (%)	2	4	0		1	0	20	46	2			
Queuing Penalty (veh)	5	10	0		3	0	38	88	4			

Intersection: 4: Tyler St & Magnolia Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	
Directions Served	L	T	T	T	R	L	L	T	T	T	R	
Maximum Queue (ft)	226	252	221	190	202	142	198	205	200	206	175	
Average Queue (ft)	100	99	92	56	69	65	98	93	110	109	52	
95th Queue (ft)	182	194	181	139	137	123	157	156	177	174	108	
Link Distance (ft)		526	526	526	526			1278	1278	1278		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	245					170	170				160	
Storage Blk Time (%)	0	1				0	0	0		2		
Queuing Penalty (veh)	0	2				0	1	1		3		

Intersection: 5: Galleria West & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (ft)	137	178	148	150	72	166	287	260	166	152	36	56
Average Queue (ft)	76	60	67	82	31	66	149	51	24	65	6	23
95th Queue (ft)	130	127	120	132	60	172	373	188	106	123	24	47
Link Distance (ft)		320	320	320			305	305	305	278	278	
Upstream Blk Time (%)							18	1	0			
Queuing Penalty (veh)							59	2	0			
Storage Bay Dist (ft)	80				175	125						75
Storage Blk Time (%)	12	2		0		0	34					0
Queuing Penalty (veh)	39	3		0		0	17					0

Intersection: 5: Galleria West & Magnolia Ave

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	193
Average Queue (ft)	102
95th Queue (ft)	177
Link Distance (ft)	176
Upstream Blk Time (%)	2
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Galleria East & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	T	R	L	T	T	TR	R	R	LTR
Maximum Queue (ft)	103	180	186	210	89	182	324	243	114	151	75	91
Average Queue (ft)	28	83	89	110	3	88	141	64	35	87	13	31
95th Queue (ft)	71	148	162	192	45	175	318	195	83	144	59	74
Link Distance (ft)		305	305	305			366	366	366	271	271	108
Upstream Blk Time (%)							2	0				1
Queuing Penalty (veh)							6	0				0
Storage Bay Dist (ft)	100				165	130						
Storage Blk Time (%)		4		2		2	22					
Queuing Penalty (veh)		1		1		5	23					

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	44	53	111	120	118	162	210	526	396	298	156	104
Average Queue (ft)	10	13	18	22	28	59	147	268	169	88	61	40
95th Queue (ft)	32	38	65	71	79	145	241	449	352	203	126	88
Link Distance (ft)			366	366	366			674	674	674		366
Upstream Blk Time (%)								1	0	0		
Queuing Penalty (veh)								0	0	0		
Storage Bay Dist (ft)	125	125				150	150				110	
Storage Blk Time (%)			0			0	2	31		3	1	
Queuing Penalty (veh)			0			0	6	53		14	3	

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	NB	SB	SB	SB
Directions Served	TR	L	L	TR
Maximum Queue (ft)	283	160	352	179
Average Queue (ft)	128	102	142	63
95th Queue (ft)	239	182	257	140
Link Distance (ft)	366		1742	1742
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)		13	29	
Queuing Penalty (veh)		35	79	

Intersection: 8: Tyler St & Hole Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	143	198	153	114	178	183	147	96	159	180	195	170
Average Queue (ft)	45	93	53	18	80	67	60	21	67	92	71	86
95th Queue (ft)	107	167	128	67	151	132	117	67	143	160	144	146
Link Distance (ft)		582	582			1742	1742				1278	1278
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			100	130			130	130	130		
Storage Blk Time (%)	2	9	1	0	3	0	1	0	1	6	0	
Queuing Penalty (veh)	3	9	2	0	7	1	1	0	3	17	1	

Intersection: 8: Tyler St & Hole Ave

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	159	263	216	186
Average Queue (ft)	74	140	80	90
95th Queue (ft)	159	228	169	165
Link Distance (ft)		646	646	646
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100			
Storage Blk Time (%)	4	18		
Queuing Penalty (veh)	8	27		

Intersection: 9: Tyler St & Galleria North

Movement	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	T	R	L	T	T	T	TR	L	L	T
Maximum Queue (ft)	147	176	40	73	174	193	136	104	136	52	79	62
Average Queue (ft)	55	90	5	24	70	57	26	15	43	15	34	9
95th Queue (ft)	110	155	23	58	133	137	79	63	105	41	66	37
Link Distance (ft)	157	164	164			474	474	474	474			526
Upstream Blk Time (%)	1	2										
Queuing Penalty (veh)	0	0										
Storage Bay Dist (ft)				115	215					170	170	
Storage Blk Time (%)					0	0						
Queuing Penalty (veh)					0	0						

Intersection: 9: Tyler St & Galleria North

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	93	106
Average Queue (ft)	28	49
95th Queue (ft)	74	98
Link Distance (ft)	526	526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Tyler St & Galleria South

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	R	L	L	T	R	L	L	T	T	T
Maximum Queue (ft)	207	115	132	172	213	106	63	232	299	490	372	223
Average Queue (ft)	132	53	68	77	159	39	8	105	184	230	149	66
95th Queue (ft)	211	97	115	195	222	82	41	216	294	389	300	170
Link Distance (ft)	189	189	189		176	176				540	540	540
Upstream Blk Time (%)	4			0	11					0	0	
Queuing Penalty (veh)	0			0	0					0	0	
Storage Bay Dist (ft)				150			50	240	240			
Storage Blk Time (%)				1	16	13	1	0	1	7		
Queuing Penalty (veh)				1	22	9	0	0	3	20		

Intersection: 10: Tyler St & Galleria South

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	T	T	T	TR
Maximum Queue (ft)	302	138	152	166	156	211
Average Queue (ft)	144	54	79	86	90	97
95th Queue (ft)	262	108	141	146	148	176
Link Distance (ft)	540		410	410	410	410
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		155				
Storage Blk Time (%)		0	0			
Queuing Penalty (veh)		0	0			

Intersection: 11: Magnolia Ave & Project Dwy

Movement	EB	EB	WB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	R	R
Maximum Queue (ft)	114	140	151	121	39	38	180
Average Queue (ft)	59	8	57	50	3	13	68
95th Queue (ft)	100	65	122	108	21	36	134
Link Distance (ft)		483	600	600	600		256
Upstream Blk Time (%)							0
Queuing Penalty (veh)							0
Storage Bay Dist (ft)	100					100	
Storage Blk Time (%)	2	0					
Queuing Penalty (veh)	10	0					

Network Summary

Network wide Queuing Penalty: 925

APPENDIX C-III

ALTERNATIVE 2 – FULL ACCESS SIGNAL
EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Intersection: 1: Polk St & Magnolia Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	TR	L	T	TR
Maximum Queue (ft)	150	220	241	162	43	48	70	106	114	135	172
Average Queue (ft)	75	118	124	71	11	8	28	47	52	59	68
95th Queue (ft)	127	192	214	128	35	32	60	91	98	113	129
Link Distance (ft)		600	600		524	524		473		491	491
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	195			225			80		100		
Storage Blk Time (%)	0	1					0	2	1	2	
Queuing Penalty (veh)	0	1					0	1	1	2	

Intersection: 2: Shopping Center Dwy & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	T	T	TR	L	T	TR	L	R
Maximum Queue (ft)	55	105	53	67	125	54	41	33	31
Average Queue (ft)	11	31	12	19	53	17	7	5	7
95th Queue (ft)	37	74	36	54	106	44	27	22	28
Link Distance (ft)		283	283	283		462	462	245	245
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	225				215				
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 3: Banbury St & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	L	TR	TR
Maximum Queue (ft)	84	86	38	63	170	278	286	82	96	12
Average Queue (ft)	23	23	9	16	49	173	181	28	37	1
95th Queue (ft)	64	65	31	46	112	249	254	67	71	7
Link Distance (ft)		462	462	462		483	483		274	246
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	155				140			50		
Storage Blk Time (%)					0	15		4	3	
Queuing Penalty (veh)					0	8		4	1	

Intersection: 4: Tyler St & Magnolia Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	117	140	110	91	54	75	84	103	82	62	49	180
Average Queue (ft)	43	65	21	11	15	16	22	50	28	16	10	85
95th Queue (ft)	88	111	75	49	40	49	60	92	66	44	35	158
Link Distance (ft)			598	598	598				320	320	320	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	130	130				100	150	150				245
Storage Blk Time (%)	0	1				0						0
Queuing Penalty (veh)	0	1				0						0

Intersection: 4: Tyler St & Magnolia Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	
Directions Served	L	T	T	T	R	L	L	T	T	T	R	
Maximum Queue (ft)	198	206	192	169	106	34	71	152	160	159	73	
Average Queue (ft)	96	111	104	78	37	6	25	70	75	84	31	
95th Queue (ft)	169	181	171	143	75	25	60	125	133	140	59	
Link Distance (ft)		526	526	526	526			1278	1278	1278		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	245					170	170				160	
Storage Blk Time (%)	0							0		0		
Queuing Penalty (veh)	0							0		1		

Intersection: 5: Galleria West & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (ft)	81	116	143	176	39	75	65	34	27	12	14	25
Average Queue (ft)	22	14	22	40	5	21	6	2	2	0	1	5
95th Queue (ft)	60	74	97	128	24	58	32	15	14	6	8	20
Link Distance (ft)		320	320	320			305	305	305	278	278	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	80				175	125						75
Storage Blk Time (%)	0	2		1								
Queuing Penalty (veh)	1	0		0								

Intersection: 5: Galleria West & Magnolia Ave

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	48
Average Queue (ft)	11
95th Queue (ft)	37
Link Distance (ft)	176
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Galleria East & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	T	R	L	T	T	TR	R	LTR
Maximum Queue (ft)	33	121	174	205	43	72	152	116	96	44	29
Average Queue (ft)	6	27	47	74	1	17	56	20	22	9	4
95th Queue (ft)	24	79	116	147	30	51	119	71	67	32	19
Link Distance (ft)		305	305	305			366	366	366	271	108
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100				165	130					
Storage Blk Time (%)		1		1			1				
Queuing Penalty (veh)		0		0			0				

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	12	29	37	43	57	13	48	188	125	60	72	38
Average Queue (ft)	2	4	4	3	5	1	15	78	18	14	21	5
95th Queue (ft)	8	18	20	19	29	8	41	151	68	43	54	23
Link Distance (ft)			366	366	366			674	674	674		366
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	125	125				150	150				110	
Storage Blk Time (%)								1			0	
Queuing Penalty (veh)								0			0	

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	NB	SB	SB	SB
Directions Served	TR	L	L	TR
Maximum Queue (ft)	60	147	155	56
Average Queue (ft)	20	54	85	15
95th Queue (ft)	48	118	141	42
Link Distance (ft)	366		1742	1742
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)		1	5	
Queuing Penalty (veh)		1	5	

Intersection: 8: Tyler St & Hole Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	70	187	146	49	53	55	68	22	97	110	63	86
Average Queue (ft)	10	78	28	3	8	11	17	1	16	51	13	37
95th Queue (ft)	48	155	106	26	31	38	48	11	54	93	39	75
Link Distance (ft)		582	582			1742	1742				1278	1278
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			100	130			130	130	130		
Storage Blk Time (%)	0	6	1						0	0		
Queuing Penalty (veh)	0	2	2						0	0		

Intersection: 8: Tyler St & Hole Ave

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	118	167	122	108
Average Queue (ft)	32	64	28	43
95th Queue (ft)	84	135	74	92
Link Distance (ft)		646	646	646
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100			
Storage Blk Time (%)	1	3		
Queuing Penalty (veh)	1	2		

Intersection: 9: Tyler St & Galleria North

Movement	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	T	R	L	T	T	T	TR	L	L	T
Maximum Queue (ft)	52	91	35	36	120	146	110	83	140	4	36	211
Average Queue (ft)	11	23	3	7	39	42	24	14	24	0	8	63
95th Queue (ft)	38	64	17	30	92	113	76	53	79	3	26	170
Link Distance (ft)	157	164	164			474	474	474	474			526
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)				115	215					170	170	
Storage Blk Time (%)												1
Queuing Penalty (veh)												0

Intersection: 9: Tyler St & Galleria North

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	229	240
Average Queue (ft)	76	82
95th Queue (ft)	195	195
Link Distance (ft)	526	526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Tyler St & Galleria South

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	R	L	T	L	L	T	T	T	TR	L
Maximum Queue (ft)	82	24	44	92	35	258	289	253	190	90	135	52
Average Queue (ft)	31	3	15	32	4	148	197	77	35	14	25	12
95th Queue (ft)	70	18	41	72	21	253	273	182	107	57	82	37
Link Distance (ft)	189	189	189	176	176			540	540	540	540	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)						240	240					155
Storage Blk Time (%)					0	0	2	0				
Queuing Penalty (veh)					0	0	5	1				

Intersection: 10: Tyler St & Galleria South

Movement	SB	SB	SB	SB
Directions Served	T	T	T	TR
Maximum Queue (ft)	134	140	152	151
Average Queue (ft)	30	36	49	46
95th Queue (ft)	85	95	105	109
Link Distance (ft)	410	410	410	410
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 11: Magnolia Ave & Project Dwy

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	121	180	148	192	38	179	173	63	62	44	79
Average Queue (ft)	25	101	85	101	7	106	106	5	22	11	29
95th Queue (ft)	72	157	134	163	28	158	160	34	50	38	64
Link Distance (ft)		483	483	483		598	598	598		225	256
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	100				100				100		
Storage Blk Time (%)		5				12		0			
Queuing Penalty (veh)		2				1		0			

Network Summary

Network wide Queuing Penalty: 45

Intersection: 1: Polk St & Magnolia Ave

Movement	EB	EB	EB	WB	WB	WB	B33	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	T	L	TR	L	T	TR
Maximum Queue (ft)	251	328	288	124	241	251	5	140	360	152	147	163
Average Queue (ft)	148	161	154	52	109	115	0	98	167	74	40	58
95th Queue (ft)	235	284	251	105	195	200	3	158	294	128	98	114
Link Distance (ft)		600	600		524	524	283		473		491	491
Upstream Blk Time (%)									0			
Queuing Penalty (veh)									0			
Storage Bay Dist (ft)	195			225				80		100		
Storage Blk Time (%)	4	2			1			13	32	7	0	
Queuing Penalty (veh)	18	4			1			33	40	2	0	

Intersection: 2: Shopping Center Dwy & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	TR	L	R	R
Maximum Queue (ft)	58	134	100	131	146	50	58	88	84	38
Average Queue (ft)	16	50	31	49	62	14	19	32	35	6
95th Queue (ft)	42	100	71	104	122	38	49	71	71	27
Link Distance (ft)		283	283	283		462	462	245	245	195
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	225				215					
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 3: Banbury St & Magnolia Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	R	L	TR	L	TR
Maximum Queue (ft)	96	86	75	150	200	405	407	28	99	121	33	39
Average Queue (ft)	36	28	10	51	121	236	248	5	33	47	8	12
95th Queue (ft)	79	70	45	111	224	358	358	22	76	91	27	32
Link Distance (ft)		462	462	462		483	483	483		274		246
Upstream Blk Time (%)							0					
Queuing Penalty (veh)							0					
Storage Bay Dist (ft)	155				140				50		100	
Storage Blk Time (%)					3	17			10	8		
Queuing Penalty (veh)					13	24			9	4		

Intersection: 4: Tyler St & Magnolia Ave

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	144	150	71	118	185	156	180	209	328	244	216	234
Average Queue (ft)	69	79	30	30	64	79	140	166	178	69	62	93
95th Queue (ft)	122	131	61	79	142	152	214	242	399	171	143	182
Link Distance (ft)			598	598	598				320	320	320	
Upstream Blk Time (%)									11	0	0	
Queuing Penalty (veh)									39	1	0	
Storage Bay Dist (ft)	130	130				100	150	150				245
Storage Blk Time (%)	2	5			3	8	17	35	1			0
Queuing Penalty (veh)	4	11			10	18	33	67	2			0

Intersection: 4: Tyler St & Magnolia Ave

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB	
Directions Served	L	T	T	T	R	L	L	T	T	T	R	
Maximum Queue (ft)	246	250	179	130	173	171	190	182	175	214	154	
Average Queue (ft)	110	98	83	48	64	79	106	91	110	113	48	
95th Queue (ft)	200	183	152	109	128	146	169	156	167	179	102	
Link Distance (ft)		526	526	526	526			1278	1278	1278		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	245					170	170				160	
Storage Blk Time (%)	0					0	1	0		1		
Queuing Penalty (veh)	1					0	2	0		2		

Intersection: 5: Galleria West & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	TR	L	T	R
Maximum Queue (ft)	132	147	139	164	76	140	257	237	135	144	28	77
Average Queue (ft)	70	60	68	87	35	60	114	44	26	64	6	27
95th Queue (ft)	119	115	118	146	69	152	320	175	112	120	23	57
Link Distance (ft)		320	320	320			305	305	305	278	278	
Upstream Blk Time (%)							15	1	0			
Queuing Penalty (veh)							48	2	0			
Storage Bay Dist (ft)	80				175	125						75
Storage Blk Time (%)	9	2		0		0	23					0
Queuing Penalty (veh)	29	2		0		0	12					0

Intersection: 5: Galleria West & Magnolia Ave

Movement	SB
Directions Served	LTR
Maximum Queue (ft)	192
Average Queue (ft)	99
95th Queue (ft)	178
Link Distance (ft)	176
Upstream Blk Time (%)	2
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Galleria East & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	T	R	L	T	T	TR	R	R	LTR
Maximum Queue (ft)	143	216	234	270	132	183	290	213	212	158	90	105
Average Queue (ft)	34	119	132	155	6	93	136	50	48	88	17	33
95th Queue (ft)	93	199	217	244	65	183	338	168	130	146	71	80
Link Distance (ft)		305	305	305			366	366	366	271	271	108
Upstream Blk Time (%)				0			8	0				0
Queuing Penalty (veh)				0			25	0				0
Storage Bay Dist (ft)	100				165	130						
Storage Blk Time (%)	1	15		7		1	19					
Queuing Penalty (veh)	2	5		3		3	20					

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	TR	L	L	T	T	T	R	L
Maximum Queue (ft)	58	59	144	168	220	166	210	564	508	448	170	130
Average Queue (ft)	11	12	25	34	39	61	160	319	219	137	75	45
95th Queue (ft)	35	39	92	106	124	155	255	616	541	370	161	102
Link Distance (ft)			366	366	366			674	674	674		366
Upstream Blk Time (%)								12	1	0		
Queuing Penalty (veh)								0	0	0		
Storage Bay Dist (ft)	125	125				150	150				110	
Storage Blk Time (%)			0			0	5	38		6	3	
Queuing Penalty (veh)			0			1	14	66		25	7	

Intersection: 7: Hughes Alley/Hole Ave & Magnolia Ave

Movement	NB	SB	SB	SB
Directions Served	TR	L	L	TR
Maximum Queue (ft)	260	159	300	194
Average Queue (ft)	119	97	135	57
95th Queue (ft)	225	173	247	138
Link Distance (ft)	366		1742	1742
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		100		
Storage Blk Time (%)		11	25	
Queuing Penalty (veh)		31	70	

Intersection: 8: Tyler St & Hole Ave

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	L	T	T	R	L	L	T	T
Maximum Queue (ft)	135	187	154	96	155	156	141	86	158	177	184	183
Average Queue (ft)	43	100	51	18	76	65	59	16	56	82	62	80
95th Queue (ft)	113	164	127	63	140	132	120	60	123	142	136	145
Link Distance (ft)		582	582			1742	1742				1278	1278
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	100			100	130			130	130	130		
Storage Blk Time (%)	2	11	1	0	2	1	1	0	0	3	1	
Queuing Penalty (veh)	4	10	2	1	5	2	1	0	1	9	2	

Intersection: 8: Tyler St & Hole Ave

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (ft)	160	289	227	235
Average Queue (ft)	73	145	85	92
95th Queue (ft)	162	244	187	188
Link Distance (ft)		646	646	646
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	100			
Storage Blk Time (%)	4	20		
Queuing Penalty (veh)	9	28		

Intersection: 9: Tyler St & Galleria North

Movement	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	T	R	L	T	T	T	TR	L	L	T
Maximum Queue (ft)	144	176	31	61	136	166	118	87	171	49	63	60
Average Queue (ft)	60	93	5	26	65	55	26	9	46	11	30	5
95th Queue (ft)	121	156	22	56	119	129	76	48	118	35	63	28
Link Distance (ft)	157	164	164			474	474	474	474			526
Upstream Blk Time (%)	0	1										
Queuing Penalty (veh)	0	0										
Storage Bay Dist (ft)				115	215					170	170	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 9: Tyler St & Galleria North

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (ft)	94	122
Average Queue (ft)	19	40
95th Queue (ft)	59	92
Link Distance (ft)	526	526
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Tyler St & Galleria South

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	R	L	L	T	R	L	L	T	T	T
Maximum Queue (ft)	204	123	138	168	195	90	63	206	299	375	319	197
Average Queue (ft)	140	62	65	60	145	35	8	103	170	214	133	60
95th Queue (ft)	217	114	111	173	217	71	38	208	267	337	261	154
Link Distance (ft)	189	189	189		176	176				540	540	540
Upstream Blk Time (%)	4		0	0	7							
Queuing Penalty (veh)	0		0	0	0							
Storage Bay Dist (ft)				150			50	240	240			
Storage Blk Time (%)				0	12	9	0		0	5		
Queuing Penalty (veh)				0	16	6	0		1	14		

Intersection: 10: Tyler St & Galleria South

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	T	T	T	TR
Maximum Queue (ft)	240	138	164	168	177	235
Average Queue (ft)	124	61	81	86	98	112
95th Queue (ft)	215	117	139	146	158	193
Link Distance (ft)	540		410	410	410	410
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		155				
Storage Blk Time (%)		0	0			
Queuing Penalty (veh)		1	0			

Intersection: 11: Magnolia Ave & Project Dwy

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	L	T	T	T	R	LTR	LTR
Maximum Queue (ft)	160	328	257	378	38	178	198	48	51	60	178
Average Queue (ft)	85	169	156	235	5	85	89	6	19	13	81
95th Queue (ft)	170	263	234	336	24	157	159	30	45	42	152
Link Distance (ft)		483	483	483		598	598	598		254	256
Upstream Blk Time (%)		0									0
Queuing Penalty (veh)		0									0
Storage Bay Dist (ft)	100				100				100		
Storage Blk Time (%)	11	14				3		0			
Queuing Penalty (veh)	37	11				0		0			

Network Summary

Network wide Queuing Penalty: 865