

Appendix B – Traffic Impact Analysis

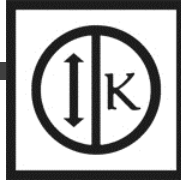


KUNZMAN ASSOCIATES, INC.

**ENTRADA HOUSING DEVELOPMENT
TRAFFIC IMPACT ANALYSIS (REVISED)**

August 14, 2018

Traffic Engineering | Transportation Planning | Parking | Noise/Vibration | Expert Witness
Air Quality | Global Climate Change | Health Risk Assessment



ENTRADA HOUSING DEVELOPMENT TRAFFIC IMPACT ANALYSIS (REVISED)

August 14, 2018

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ENTRADA HOUSING DEVELOPMENT

TRAFFIC IMPACT ANALYSIS (REVISED)

This report contains the revised traffic impact analysis for the proposed Entrada Housing Development project. The project site is located at the northwest corner of the Chicago Avenue and 7th Street intersection in the City of Riverside. The 2.03 acre project site is proposed to be developed with 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market.

The traffic impact analysis contains documentation of Existing traffic conditions, trips generated by the project, distribution of the project trips to roads outside the project, calculation of Existing Plus Project¹ traffic conditions, an analysis of Opening Year (2020) traffic conditions without and with the project, and an analysis of Buildout Year (2025) traffic conditions without and with the project. Each of these topics is contained in a separate section of the report. The first section is “Findings”, and subsequent sections expand upon the findings. In this way, information on any particular aspect of the study can be easily located by the reader.

Although this is a technical report, every effort has been made to write the report clearly and concisely. To assist the reader with those terms unique to transportation engineering, a glossary of terms is provided in Appendix A.

¹ The existing plus project conditions has been analyzed to comply with the Sunnyvale West Neighborhood Association v. City of Sunnyvale CEQA court case. This scenario assumes the full development of the proposed project and full absorption of the proposed project trips on the circulation system at the present time.

I. FINDINGS

This section summarizes the existing traffic conditions, project impacts, and the proposed mitigation measures.

A. Definition of Deficiency and Significant Impact

The following definitions of deficiencies and significant impacts have been developed in accordance with the City of Riverside requirements:

The definition of an intersection deficiency has been obtained from the City of Riverside Traffic Impact Analysis Preparation Guide, 2016. The Guide states that peak hour intersection operations of Level of Service D or better are generally acceptable along all City roadways of Collector or higher classification. An exception to the local road standard is Level of Service E, at intersections of City Arterials that are used by regional freeway bypass traffic and at heavily traveled freeway interchanges.

B. Existing Traffic Conditions

1. The project site is partially undeveloped and partially developed with residential. It is not generating significant trips.
2. Existing roadways adjacent to the project include Chicago Avenue, Linden Street, 7th Street, and University Avenue.
3. The study intersections currently operate at acceptable Levels of Service during the peak hours for Existing traffic conditions, except for the following study intersections that currently operate at unacceptable Levels of Service during the peak hours:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
7th Street (EW) - #5

C. Traffic Impacts

1. The proposed land uses for the 2.03 acre project site consist of 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market. The project site is proposed to provide access to Chicago Avenue and 7th Street.
2. The proposed development is projected to generate a total of approximately 990 daily vehicle trips, 72 of which will occur during the morning peak hour and 68 of which will occur during the evening peak hour.
4. For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:

Project North Access/7th Street (EW) - #3

Project South Access (EW) - #4

7th Street (EW) - #5

5. For Opening Year (2020) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:

Project North Access/7th Street (EW) - #3

7th Street (EW) - #5

6. For Opening Year (2020) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:

Project North Access/7th Street (EW) - #3

Project South Access (EW) - #4

7th Street (EW) - #5

As shown in Table 7, the project site does not significantly impact any study intersections for Opening Year (2020) With Project traffic conditions, with improvements.

7. For Buildout Year (2025) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:

Project North Access/7th Street (EW) - #3

7th Street (EW) - #5

8. For Buildout Year (2025) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:

Project North Access/7th Street (EW) - #3

Project South Access (EW) - #4

7th Street (EW) - #5

As shown in Table 10, the project site does not significantly impact any study intersections for Buildout Year (2025) With Project traffic conditions, with improvements.

D. Project Specific On-Site Mitigation Measures

The following measures are recommended to mitigate the impact of the project on traffic circulation:

1. Site-specific circulation and access recommendations are depicted on Figure 40.
2. Chicago Avenue from the north project boundary to 7th Street is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.
3. 7th Street from the west project boundary to Chicago Avenue is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.
4. Sufficient on-site parking should be provided to meet City of Riverside parking code requirements.
5. On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.
6. Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Riverside sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to issue of grading permits.
7. As is the case for any roadway design, the City of Riverside should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

E. Significantly Impacted Intersection Mitigation Measures

The following measure is recommended to mitigate the impact of the project on significantly impacted study area intersections:

1. The recommended mitigation measures for the significantly impacted study area intersections is an extension of the north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary.

Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would remain.

II. CONGESTION MANGEMENT PROGRAM METHODOLOGY

This section discusses the County of Riverside Congestion Management Program (2011). The purpose, prescribed methodology, and definition of a significant traffic impact are discussed.

A. Congestion Management Program

The Congestion Management Program is a result of Proposition 111 which was a statewide initiative approved by the voters in June, 1990. The proposition allowed for a nine cent per gallon state gasoline tax increase over a five year period.

Proposition 111 explicitly stated that the new gas tax revenues were to be used to fix existing traffic problems and was not to be used to promote future development. For a City to get its share of the Proposition 111 gas tax, it has to follow certain procedures specified by the State Legislature. The legislation requires that a traffic impact analysis be prepared for new development. The traffic impact analysis is prepared to monitor and fix traffic problems caused by new development.

The Legislature requires that adjacent jurisdictions use a standard methodology for conducting a traffic impact analysis. To assure that adjacent jurisdictions use a standard methodology in preparing a traffic impact analysis, one common procedure is that all Cities within a County, and the County agency itself, adopt and use one standard methodology for conducting a traffic impact analysis.

Although each City has developed standards for preparing a traffic impact analysis, traffic impact analysis requirements do vary in detail from one City to another, but not in overall intent or concept. The general approach selected by each City for conducting a traffic impact analysis has common elements.

The general approach for conducting a traffic impact analysis is that existing peak hour intersection turning movement volumes are counted and the percent of roadway capacity currently being used is determined. Then growth in traffic volumes are accounted for and added to existing traffic volumes and the percent of roadway capacity used is again determined. The project trips are then added and the percent of roadway capacity used is again determined. If the new project adds trips to an overcrowded facility, then the new project has to mitigate the traffic impact so that the facility operates at a level that is no worse than before the project trips was added.

If the project size is below a certain minimum threshold level, then a project does not have to have a traffic impact analysis prepared, once it is shown or agreed that the project is below the minimum threshold.

If a project is bigger than the minimum threshold size, then a traffic impact analysis is required.

B. Prescribed Methodology for a Traffic Impact Analysis

The traffic impact analysis must include all monitored intersections to which the project adds trips above a certain minimum amount.

In the City of Riverside, the minimum project added trips that are needed before an intersection has to be studied is 50 or more peak hour trips.

The City of Riverside allows Level of Service D to be used as a maximum acceptable threshold for the study intersections.

A significant impact occurs at a study intersection when the addition of project generated trips causes either peak hour Level of Service to degrade from acceptable Level of Service (A thru D) to unacceptable Level of Service (E or F) or peak hour delay to increase as follows:

Level of Service A/B	=	By 10.0 seconds
Level of Service C	=	By 8.0 seconds
Level of Service D	=	By 5.0 seconds
Level of Service E	=	By 2.0 seconds
Level of Service F	=	By 1.0 seconds

In the City of Riverside, the technique used to assess the capacity needs of an intersection is known as the intersection Delay methodology (see Appendix D) based on the Highway Capacity Manual. To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection. Signalized intersections are considered deficient (Level of Service F) if the overall intersection critical volume to capacity ratio equals or exceeds 1.0, even if the level of service defined by the delay value is below the defined Level of Service standard. The Volume to Capacity ratio is defined as the critical volumes divided by the intersection capacity. A Volume to Capacity ratio greater than 1.0 implies an infinite queue.

The Level of Service analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of four seconds per phase. Signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis.

The yellow times have been calculated based on the California Manual on Uniform Traffic Control Devices (2014 Edition), Table 4D-102 (CA).

Project trips are generated using rates and procedures contained in the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

This traffic analysis has been prepared in accordance with the traffic impact analysis requirements.

The project generated trips were added to the study intersections, and a full intersection analysis was conducted, even when the project added trips failed to meet the minimum thresholds that require an intersection analysis.

C. Mitigation Measures

If a project is large enough to require that a traffic impact analysis be prepared, and if the project adds trips to an intersection above a minimum threshold, and if the intersection is operating at above an acceptable level of operation, then the project must mitigate its traffic impact.

Traffic mitigation can be in many forms including adding lanes. Lanes can sometimes be obtained through restriping or elimination of parking, and sometimes require spot roadway widening.

III. PROJECT DESCRIPTION

This section discusses the project's location and proposed development. Figure 1 shows the project location and Figure 2 illustrates the site plan.

A. Location

The project site is located at the northwest corner of the Chicago Avenue and 7th Street intersection in the City of Riverside.

B. Proposed Development

The 2.03 acre project site is proposed to be developed with 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market. The project site is proposed to provide access to Chicago Avenue and 7th Street.

C. General Plan Amendment

A General Plan Amendment is being requested for the project site to go from Medium Density Residential (R-1-7000) to High Density Residential (R-3-1500). Medium Density Residential (R-1-7000) allows for a maximum of 8.0 single-family detached residential dwelling units per acre and High Density Residential (R-3-1500) allows for a maximum of 29.0 multi-family attached residential dwelling units per acre. For Medium Density Residential (R-1-7000), the 2.03 acre project site allows for a maximum of 16 single-family detached residential dwelling units. For High Density Residential (R-3-1500), the 2.03 acre project site allows for a maximum of 59 multi-family attached residential dwelling units. The project site is allowed a bonus density under State law to bring the total number of multi-family attached residential dwelling units to 65 dwelling units.

Figure 1
Project Location Map

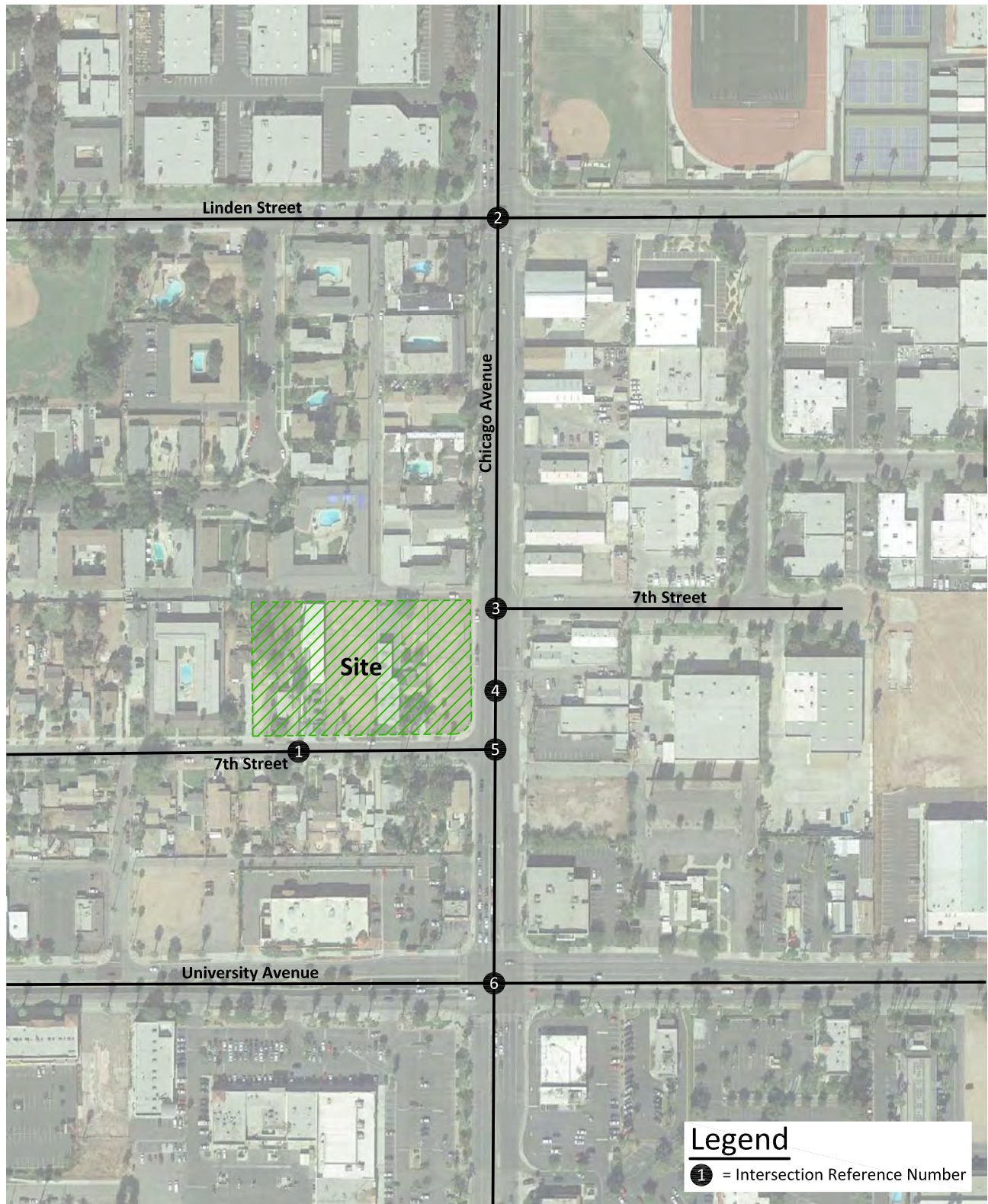
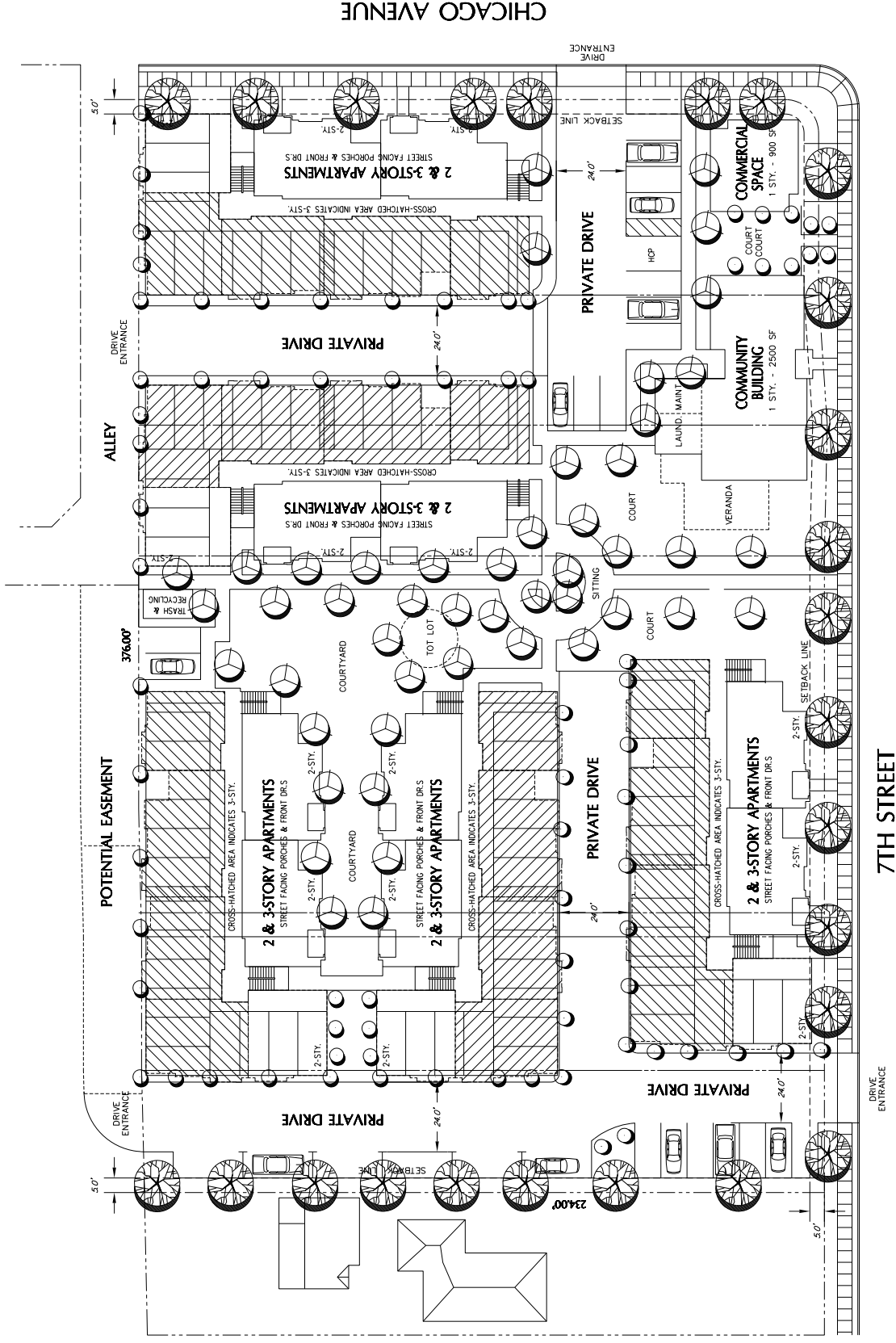


Figure 2
Site Plan



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IV. EXISTING TRAFFIC CONDITIONS

The traffic conditions as they exist today are discussed below and illustrated on Figures 3 to 11.

A. Study Area

Appendix B includes the scoping agreement with City of Riverside staff. The study area includes the following intersections:

Study Intersections	Jurisdiction
Project Access (NS) at: 7th Street (EW) - #1	City of Riverside
Chicago Avenue (NS) at: Linden Street (EW) - #2 Project North Access/7th Street (EW) - #3 Project South Access (EW) - #4 7th Street (EW) - #5 University Avenue (EW) - #6	City of Riverside City of Riverside City of Riverside City of Riverside City of Riverside

B. Surrounding Street System

Existing roadways within the study area include Chicago Avenue, Linden Street, 7th Street, and University Avenue.

Chicago Avenue: This north-south four lane undivided to five lane divided roadway is classified as a 110 Foot Arterial on the City of Riverside General Plan Circulation Element. It currently carries approximately 21,200 to 26,400 vehicles per day in the study area.

Linden Street: This east-west two lane undivided to four lane undivided roadway is classified as a 66 Foot Collector west of Chicago Avenue and as an 80 Foot Collector east of Chicago Avenue on the City of Riverside General Plan Circulation Element. It currently carries approximately 5,100 to 7,900 vehicles per day in the study area.

7th Street: This east-west two lane undivided roadway is not classified on the City of Riverside General Plan Circulation Element. It currently carries approximately 400 to 800 vehicles per day in the study area.

University Avenue: This east-west four lane divided roadway is classified as a Parkway on the City of Riverside General Plan Circulation Element. It currently carries approximately 19,700 to 22,600 vehicles per day in the study area.

C. Existing Travel Lanes and Intersection Controls

Figure 3 identifies the Existing roadway conditions and intersection geometry for study roadways. The Existing number of through lanes for roadways and the intersection controls are identified.

D. Existing Average Daily Traffic Volumes

Figure 4 depicts the Existing average daily traffic volumes. The Existing average daily traffic volumes have been obtained and factored from peak hour intersection turning movement counts (see Appendix C) made for Kunzman Associates, Inc. in April 2018 using the following formula for each intersection leg:

$$\text{PM Peak Hour (Approach Volume + Exit Volume)} \times 12 = \text{Leg Volume.}$$

This is a conservative estimate and may overestimate the average daily traffic volumes.

E. Existing Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The Existing delay and Level of Service for intersections in the vicinity of the project are shown in Table 1. Existing delay is based upon manual weekday morning and evening peak hour intersection turning movement counts made for Kunzman Associates, Inc. in April 2018 (see Figures 5 and 6). Intersection turning movement count worksheets are provided in Appendix C.

There are two peak hours in a weekday. The morning peak period is between 7:00 AM and 9:00 AM, and the evening peak period is between 4:00 PM and 6:00 PM. The actual peak hour within the two hour interval is the four consecutive 15 minute periods with the highest total volume when all movements are added together. Thus, the evening peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15 minute periods have the highest combined volume. Explicit peak hour factors have been calculated using the data collected for this project.

The study intersections currently operate at acceptable Levels of Service during the peak hours for Existing traffic conditions, except for the following study intersections that currently operate at unacceptable Levels of Service during the peak hours:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
7th Street (EW) - #5

Existing delay worksheets are provided in Appendix D.

F. City of Riverside Circulation Plan

Figure 7 shows the current City of Riverside General Plan Circulation Element. Both existing and future roadways are included in the Circulation Element of the General Plan and are graphically depicted on Figure 7. This figure shows the nature and extent of arterial highways that are needed to adequately serve the ultimate development depicted by the

land use element of the General Plan. The City of Riverside General Plan roadway cross-sections are illustrated on Figure 8.

G. Existing Transit Service

The study area is currently served by the Riverside Transit Agency Routes 13 and 22 Chicago Avenue and Riverside Transit Agency Routes 1, 14, 22, 204, and Gold Line along University Avenue. The existing bus routes provided within the study area are shown on Figure 9.

H. Bicycle & Pedestrian Facilities

Existing pedestrian facilities adjacent to the project site are shown on Figure 10. The City of Riverside bike paths are illustrated on Figure 11.

Table 1

Existing Intersection Delay and Level of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay-LOS ²	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	25.1-C	18.3-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	40.9-E	53.6-F
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	38.2-E	60.3-F
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.1-C	32.1-C

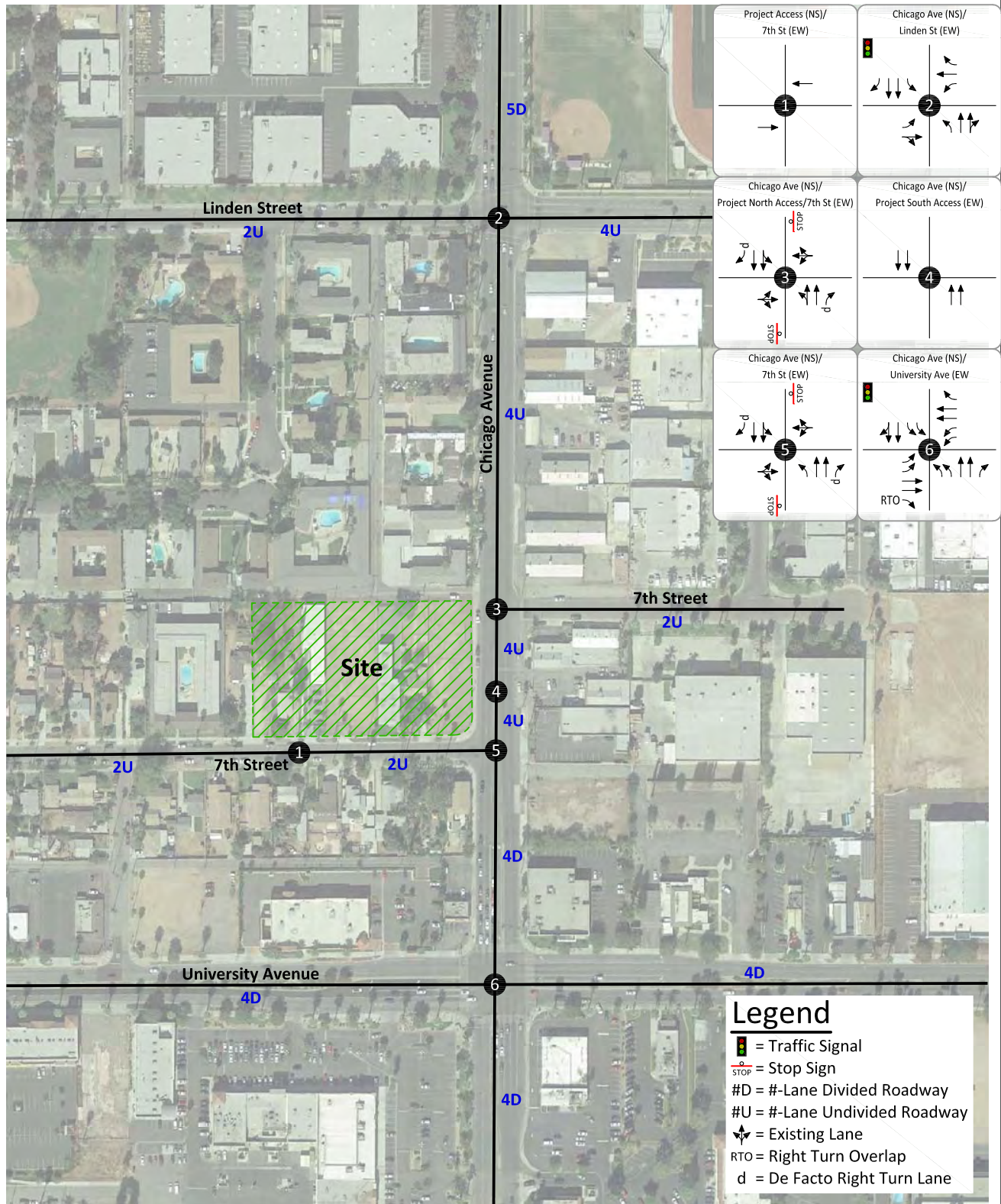
¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane

² Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 [Highway Capacity Manual](#), overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; CSS = Cross Street Stop

Figure 3
Existing Through Travel Lanes and Intersection Controls



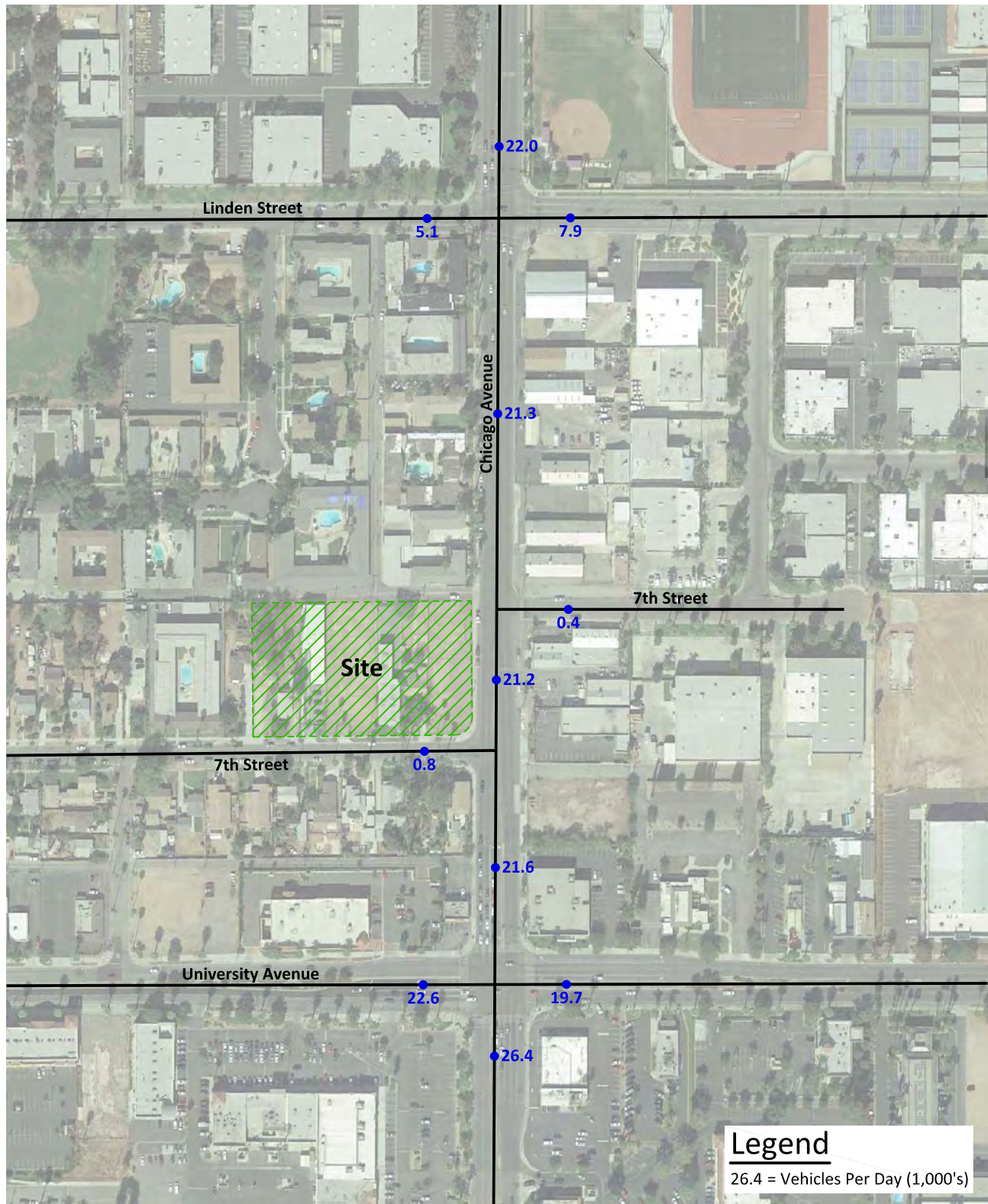
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Figure 4
Existing Average Daily Traffic Volumes



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Figure 5
Existing Morning Peak Hour Intersection Turning Movement Volumes

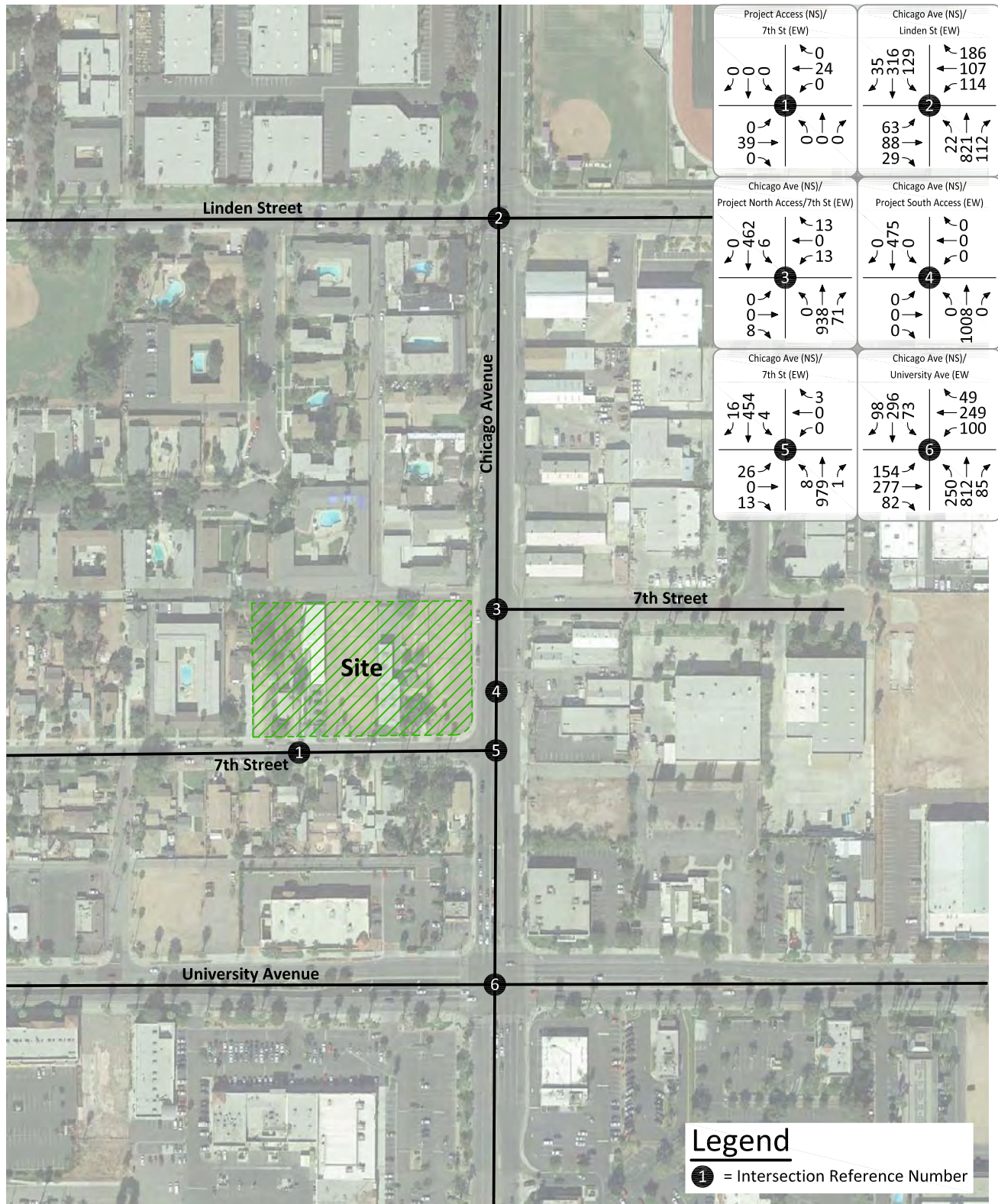


Figure 6
Existing Evening Peak Hour Intersection Turning Movement Volumes

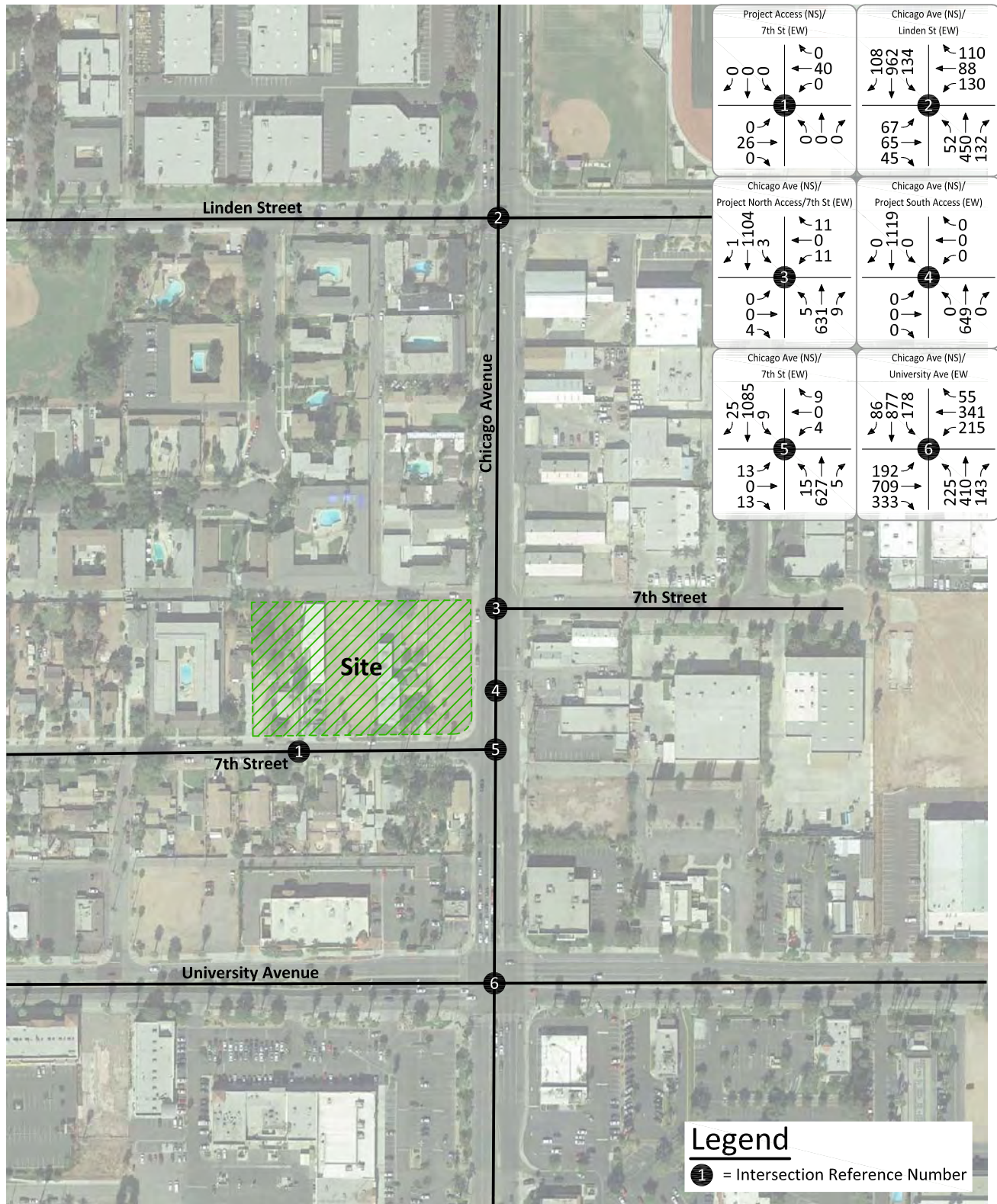
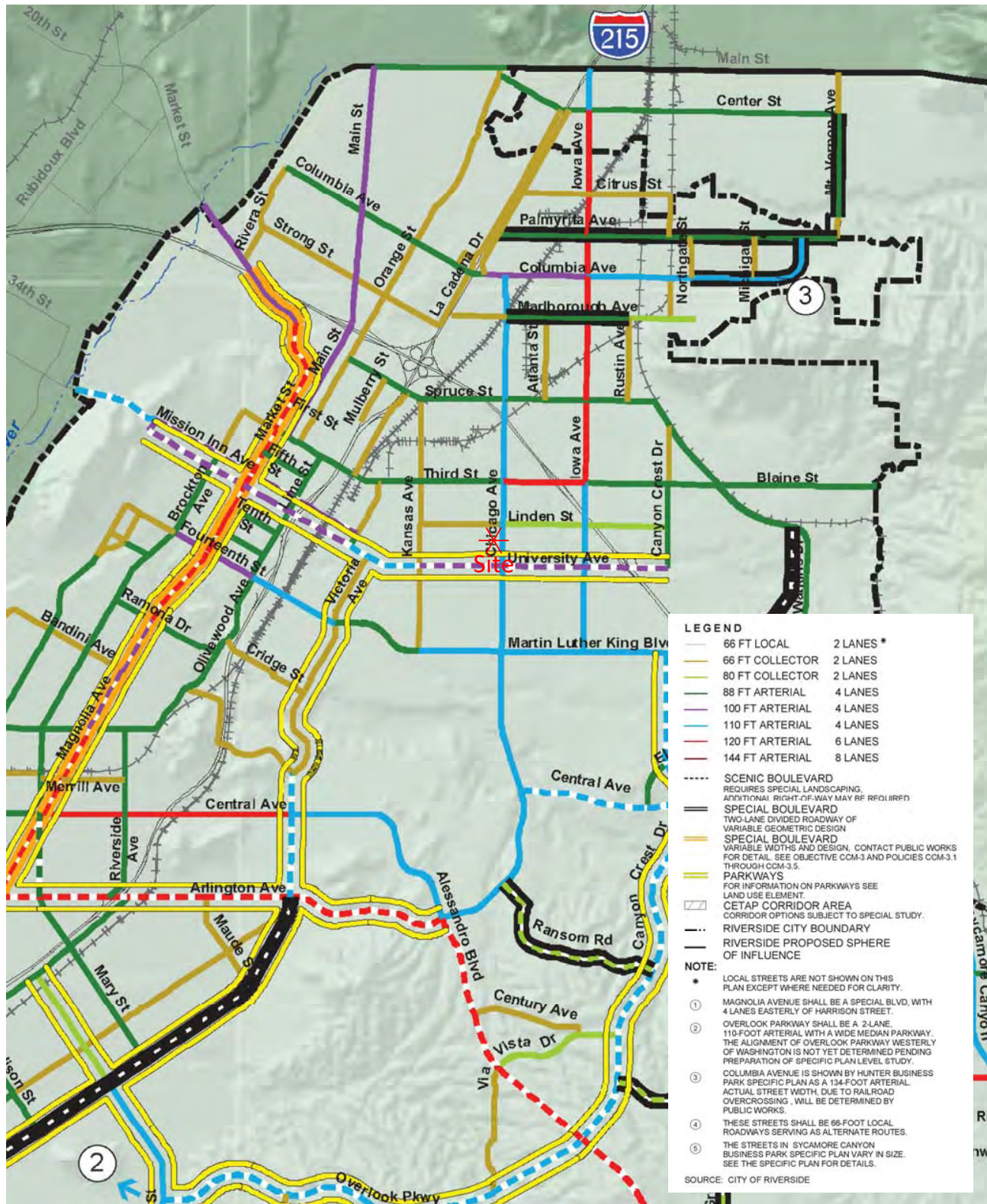


Figure 7
City of Riverside General Plan Circulation Element



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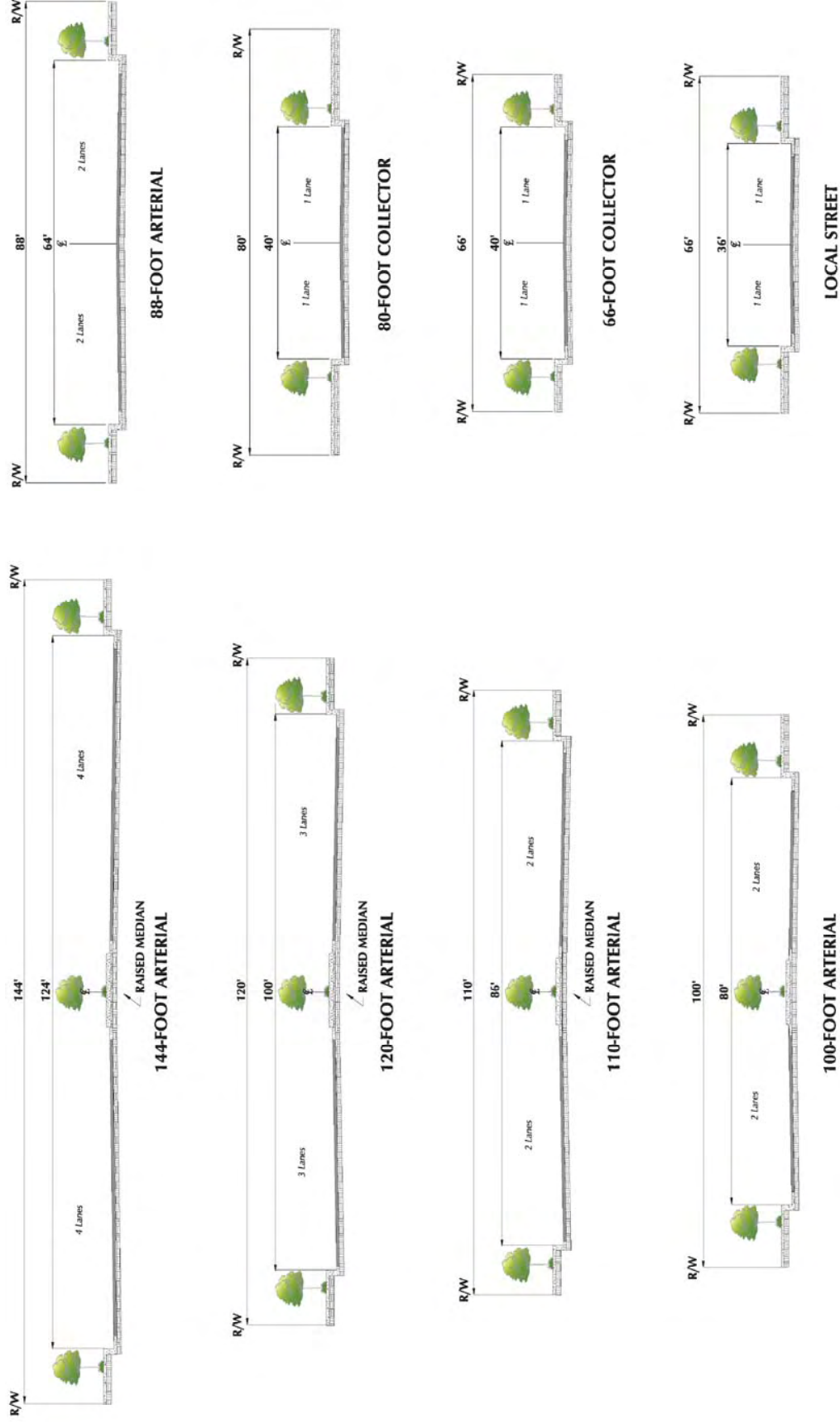
Source: City of Riverside

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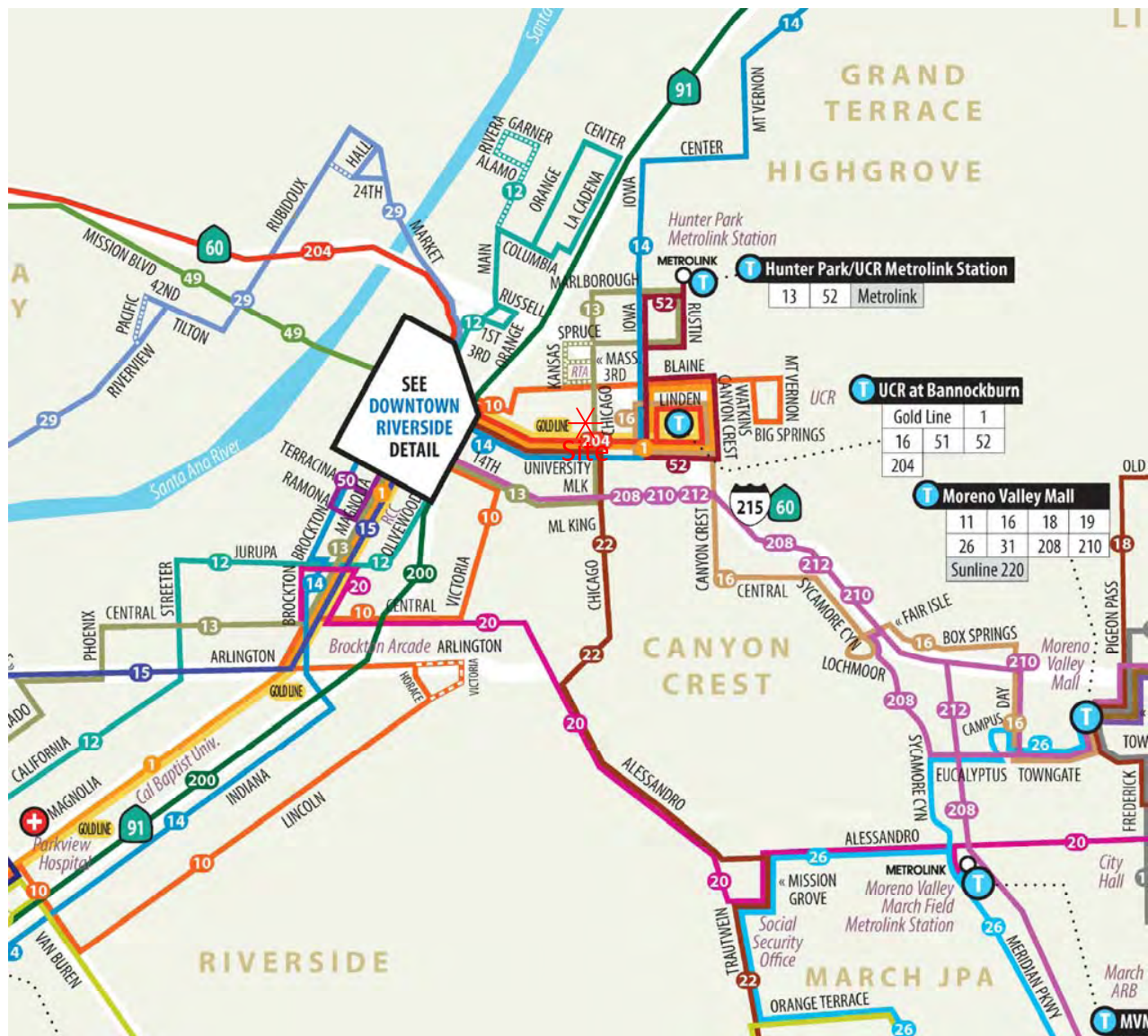


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Figure 8
City of Riverside General Plan Roadway Cross-Sections



Existing Transit Routes



Legend

- | | | |
|---|---|---|
|  Route Number |  Point of Interest |  Interstate |
|  Route Path |  Medical Facility |  State Highway |
|  Commuter Routing |  Transfer Point |  Main Road |
|  Alternate Routing |  Metrolink Station |  Water |

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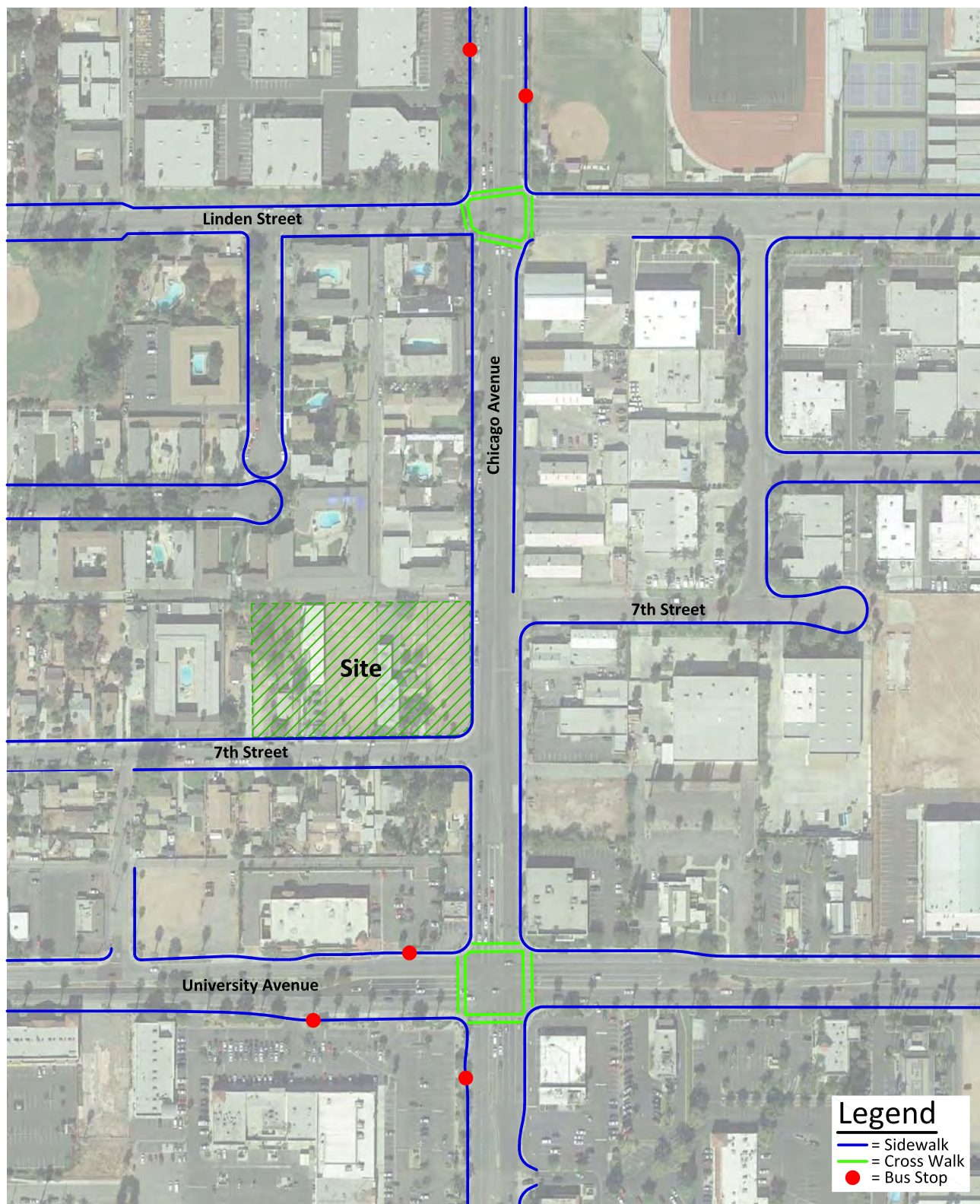
Source: Riverside Transit Agency



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Figure 10
Existing Pedestrian Facilities



Legend
 — = Sidewalk
 — = Cross Walk
 ● = Bus Stop

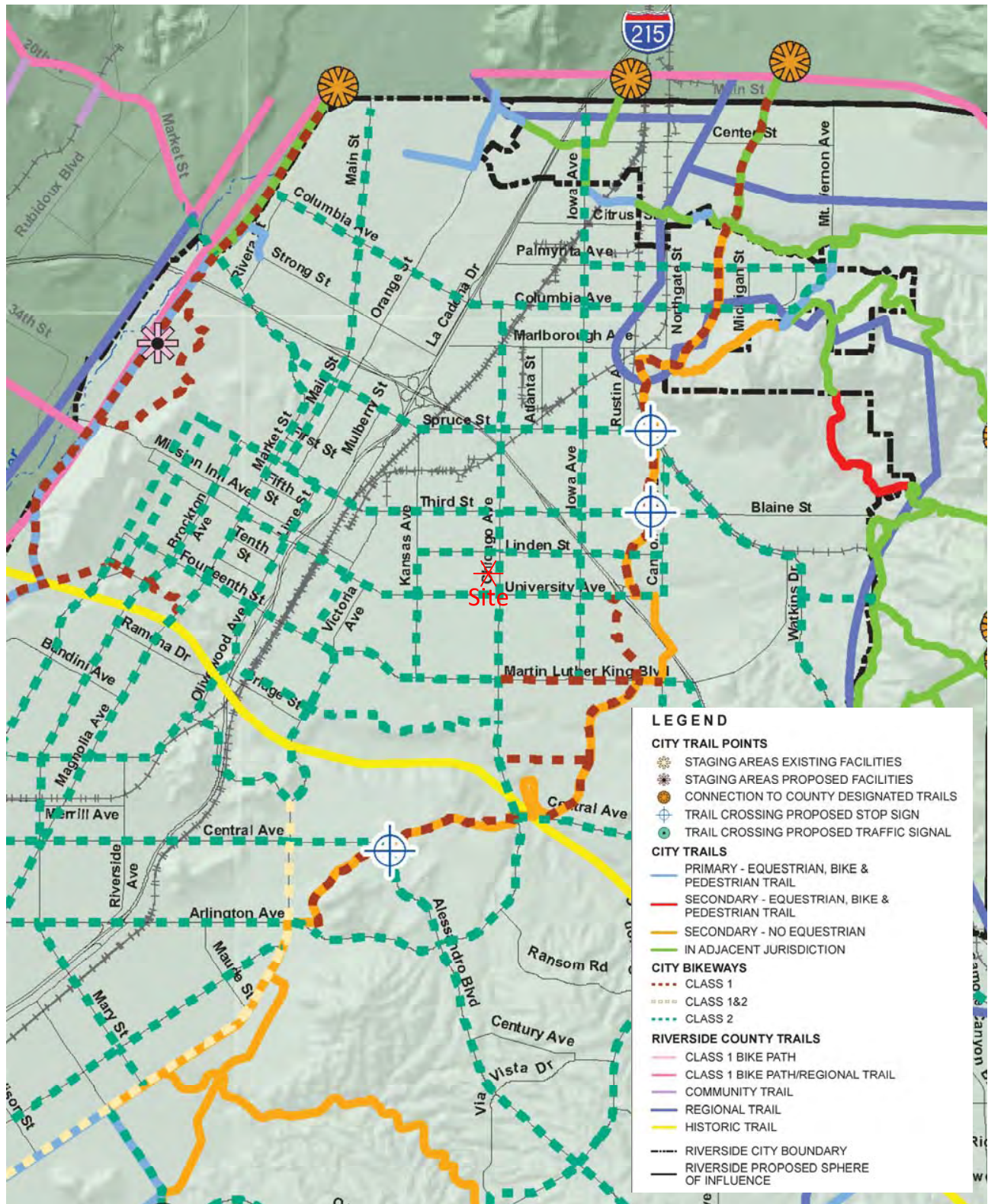
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Figure 11
City of Riverside Bike Paths



KUNZMAN ASSOCIATES, INC.

Source: City of Riverside



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V. PROPOSED PROJECT

The 2.03 acre project site is proposed to be developed with 65 dwelling units of multifamily housing (low-rise) and 900 square feet of convenience market. The project site is proposed to provide access to Chicago Avenue and 7th Street.

A. Site Traffic

1. Trip Generation

The trips generated by the project are determined by multiplying an appropriate trip generation rate by the quantity of land use. Trip generation rates are predicated on the assumption that energy costs, the availability of roadway capacity, the availability of vehicles to drive, and life styles remain similar to what are known today. A major change in these variables may affect trip generation rates.

Trip generation rates were determined for daily trips, morning peak hour inbound and outbound trips, and evening peak hour inbound and outbound trips for the proposed land uses. By multiplying the trip generation rates by the land use quantities, the traffic volumes are determined. Table 2 shows the project trip generation based upon rates obtained from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017.

As shown in Table 2, the proposed development is projected to generate a total of approximately 990 daily vehicle trips, 72 of which will occur during the morning peak hour and 68 of which will occur during the evening peak hour.

It should be noted that for the convenience market land use, a portion of the trips would come from pass-by trips, trips that are currently on the roadway system. The project trips have been reduced as a result of pass-by trips based upon the City of Riverside Public Works Department, Traffic Impact Analysis Preparation Guide, January 2016.

Traffic volumes shown in Table 2 consist of the total trips generated for each project land use. As a residential trip generated by the project will also be making trips to the convenience market land use within the project, a double counting of those trips occurs. In order to analyze a “conservative” scenario in terms of the assignment of project trips, the traffic volumes from the convenience market portion of the project site have not been reduced as a result of the internal interaction between the proposed land uses.

2. Trip Distribution

Figures 12 to 14 contain the directional distributions of the project trips for the proposed land uses. To determine the trip distributions for the proposed project, peak hour intersection turning movement counts of the existing directional distribution of traffic volumes for existing areas in the vicinity of the site and other

additional information on future development and traffic impacts in the area were reviewed.

3. Trip Assignment

Based on the identified trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 15. Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 16 and 17, respectively.

4. Modal Split

The trip reducing potential of public transit has not been considered in this report. Essentially the project trip projections are conservative in that public transit might be able to reduce the traffic volumes.

B. General Plan Amendment

1. Description

A General Plan Amendment is being requested for the project site to go from Medium Density Residential (R-1-7000) to High Density Residential (R-3-1500). Medium Density Residential (R-1-7000) allows for a maximum of 8.0 single-family detached residential dwelling units per acre and High Density Residential (R-3-1500) allows for a maximum of 29.0 multi-family attached residential dwelling units per acre. For Medium Density Residential (R-1-7000), the 2.03 acre project site allows for a maximum of 16 single-family detached residential dwelling units. For High Density Residential (R-3-1500), the 2.03 acre project site allows for a maximum of 59 multi-family attached residential dwelling units. The project site is allowed a bonus density under State law to bring the total number of multi-family attached residential dwelling units to 65 dwelling units.

2. Trip Generation Comparison

The 16 single-family detached residential dwelling units is projected to generate approximately 151 daily vehicle trips, 12 (3 inbound and 9 outbound) of which occur during the morning peak hour and 16 (10 inbound and 6 outbound) of which occur during the evening peak hour. The trip generation is based upon rates obtained from the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codey 210.

The proposed development is projected to generate approximately 839 more daily vehicle trips, 60 more trips during morning peak hour and 52 more trips during the evening peak hour. Of the 60 more trips during the morning peak hour, 25 more are inbound trips and 35 more are outbound trips. Of the 52 more trips during the evening peak hour, 30 more are inbound trips and 23 more are outbound trips.

Table 2

Project Trip Generation¹

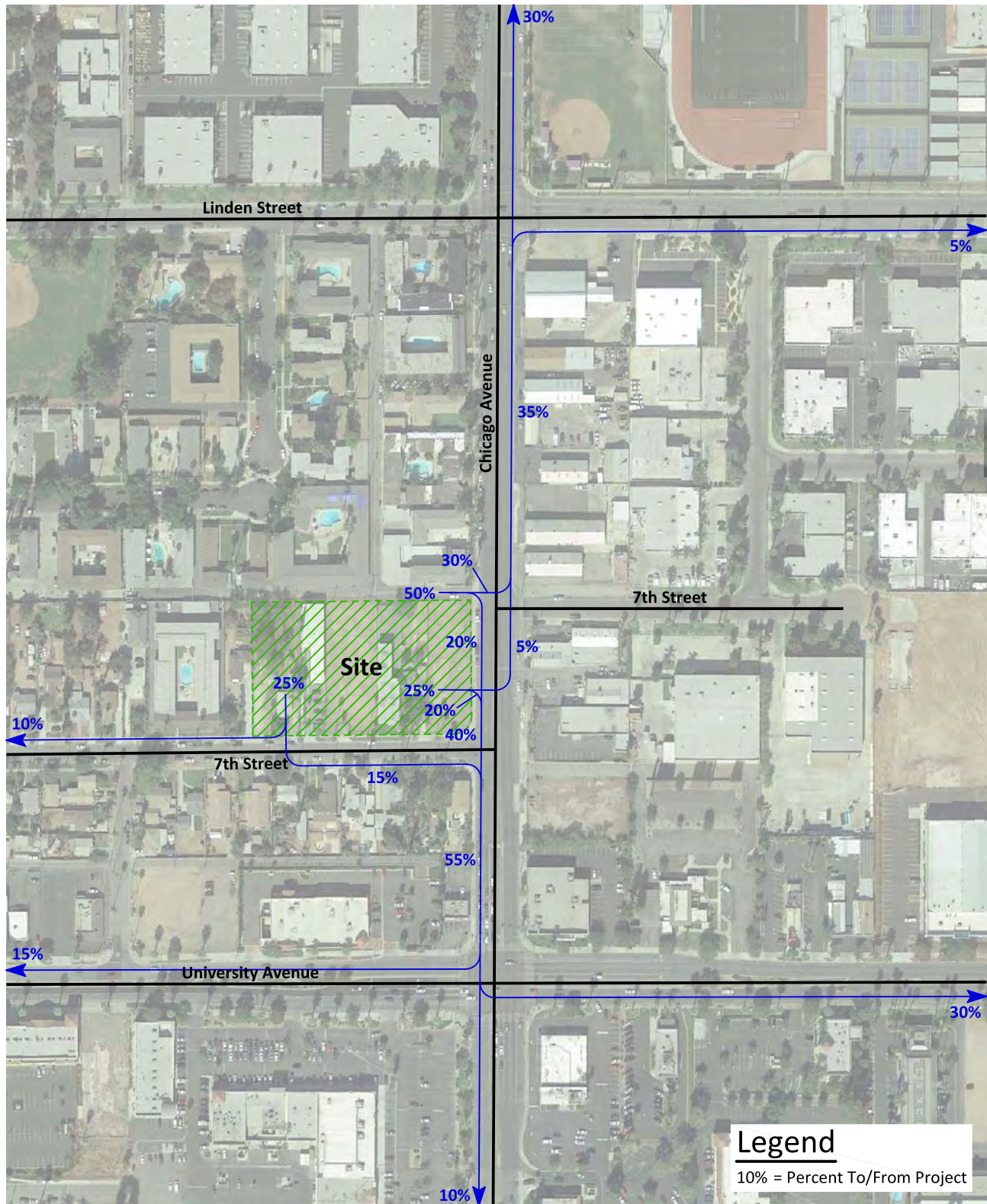
Land Use	Quantity	Units ²	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
<u>Trip Generation Rates</u>									
Multifamily Housing (Low-Rise)	1.00	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Convenience Market	1.00	TSF	31.27	31.27	62.54	25.05	24.06	49.11	762.28
<u>Trips Generated</u>									
Multifamily Housing (Low-Rise)	65	DU	7	23	30	23	13	36	476
Convenience Market	0.900	TSF	28	28	56	23	22	44	686
Subtotal			35	51	86	46	35	80	1,162
<u>Pass-By Trips Reduction</u>									
Convenience Market (25%) ³			-7	-7	-14	-6	-6	-12	-172
New Trips Generated			28	44	72	40	29	68	990

¹ Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 220 and 851.

² DU = Dwelling Units, TSF = Thousand Square Feet

³ Pass-by rate percentage from the City of Riverside Public Works Department Traffic Impact Analysis Preparation Guide, January 2016.

Figure 12
Project Trip Distribution - Residential



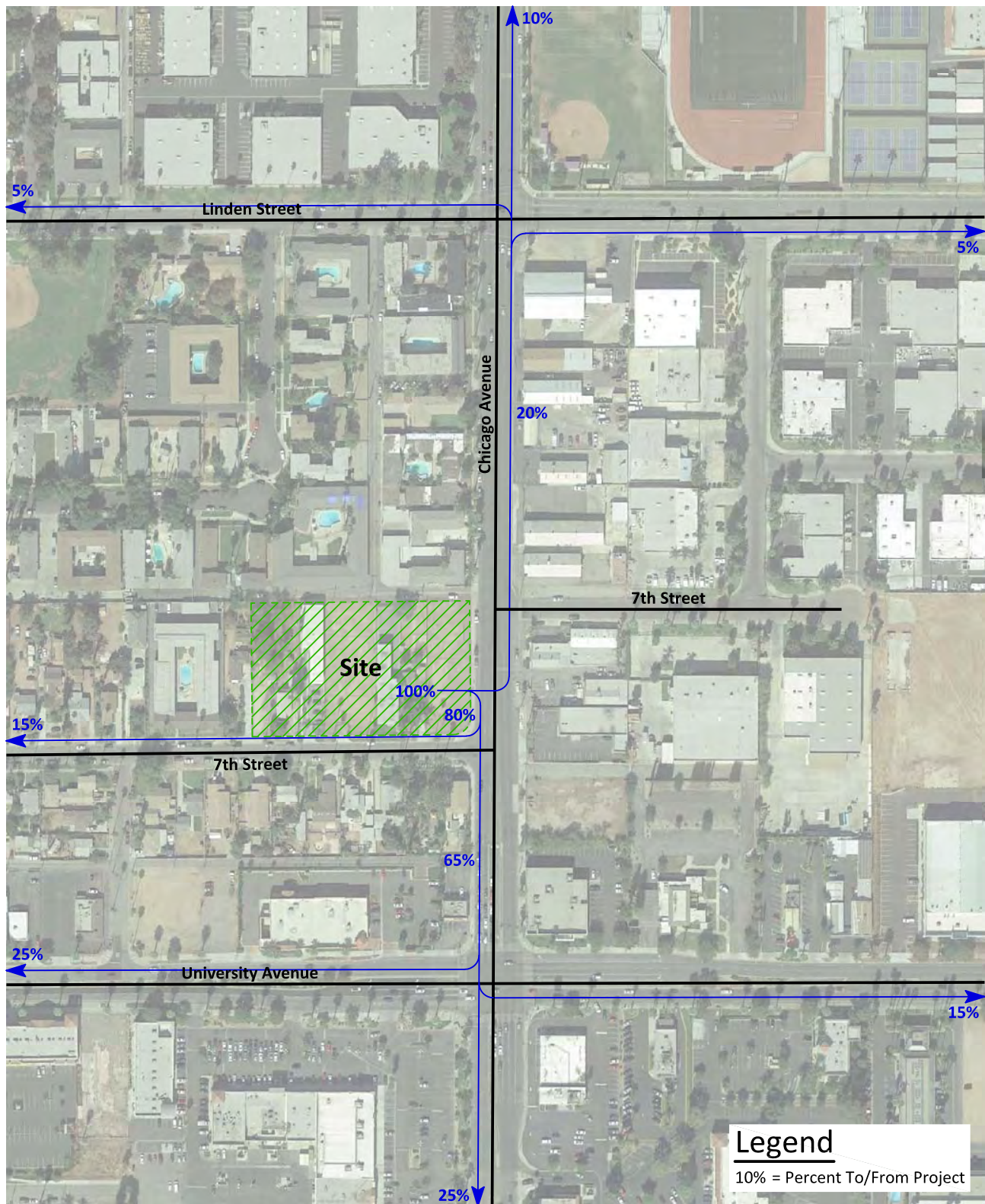
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Figure 13
Project Trip Distribution - Convenience Market



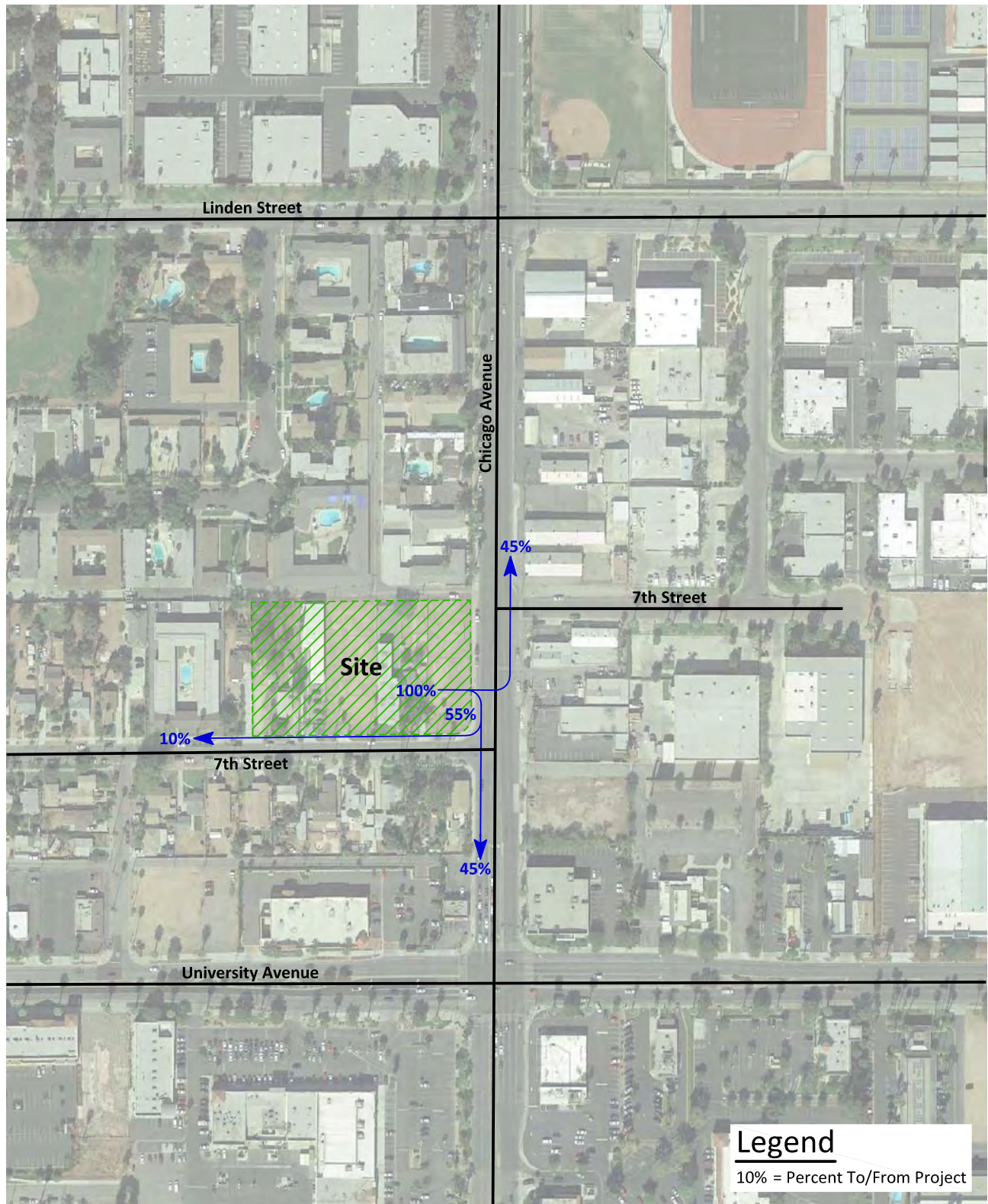
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Figure 14
Pass-By Trip Distribution



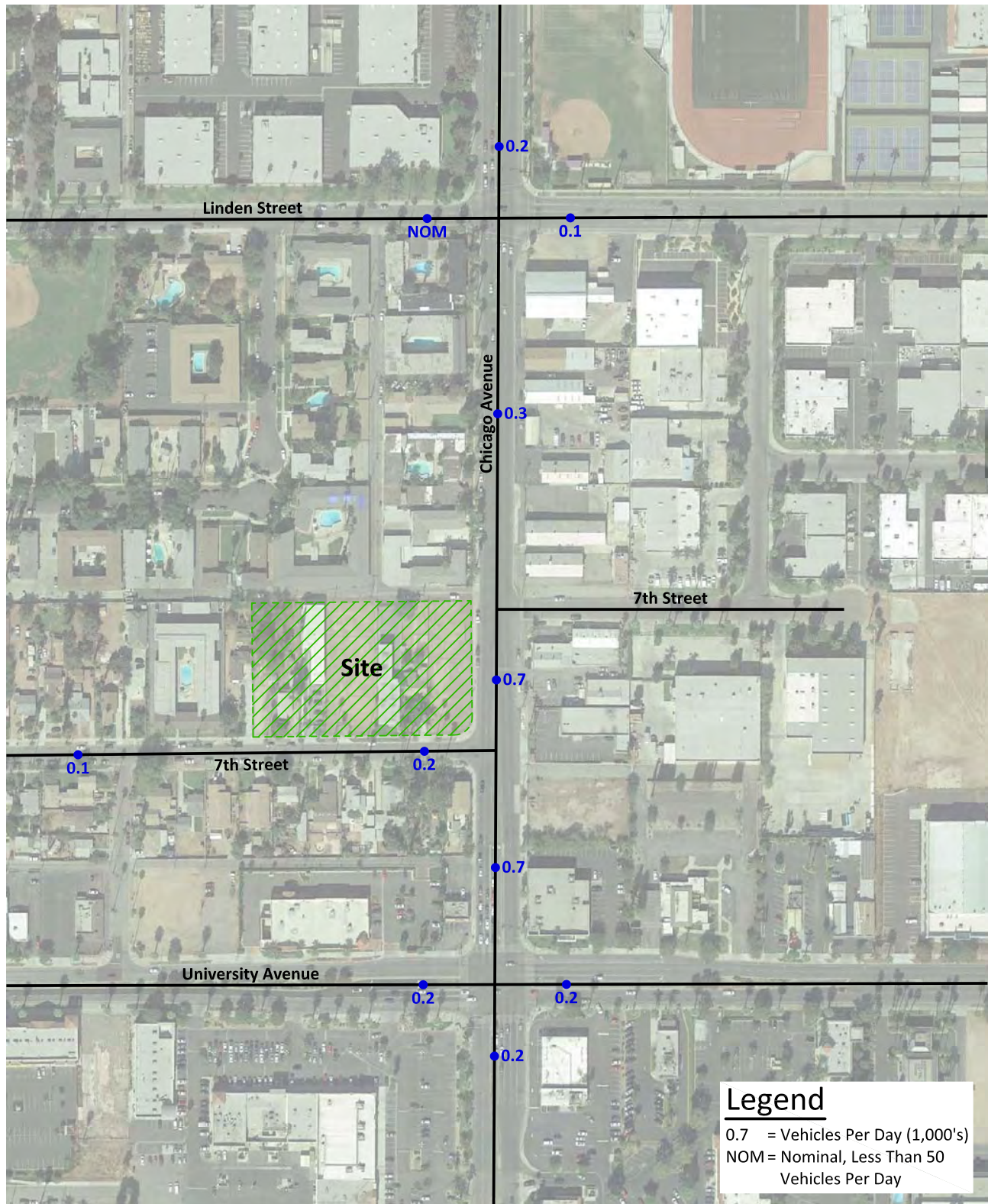
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Figure 15
Project Average Daily Traffic Volumes



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Figure 16
Project Morning Peak Hour Intersection Turning Movement Volumes

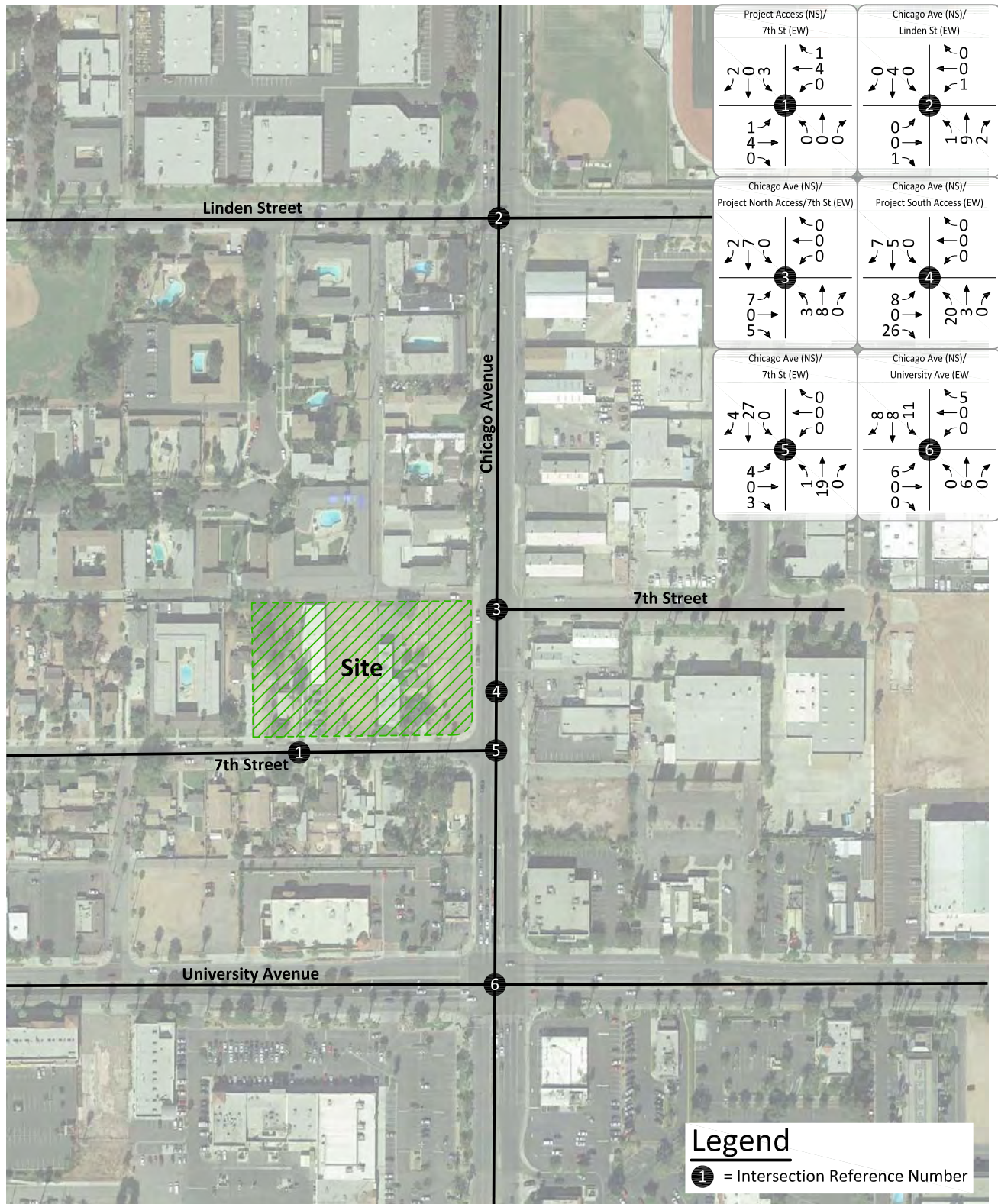
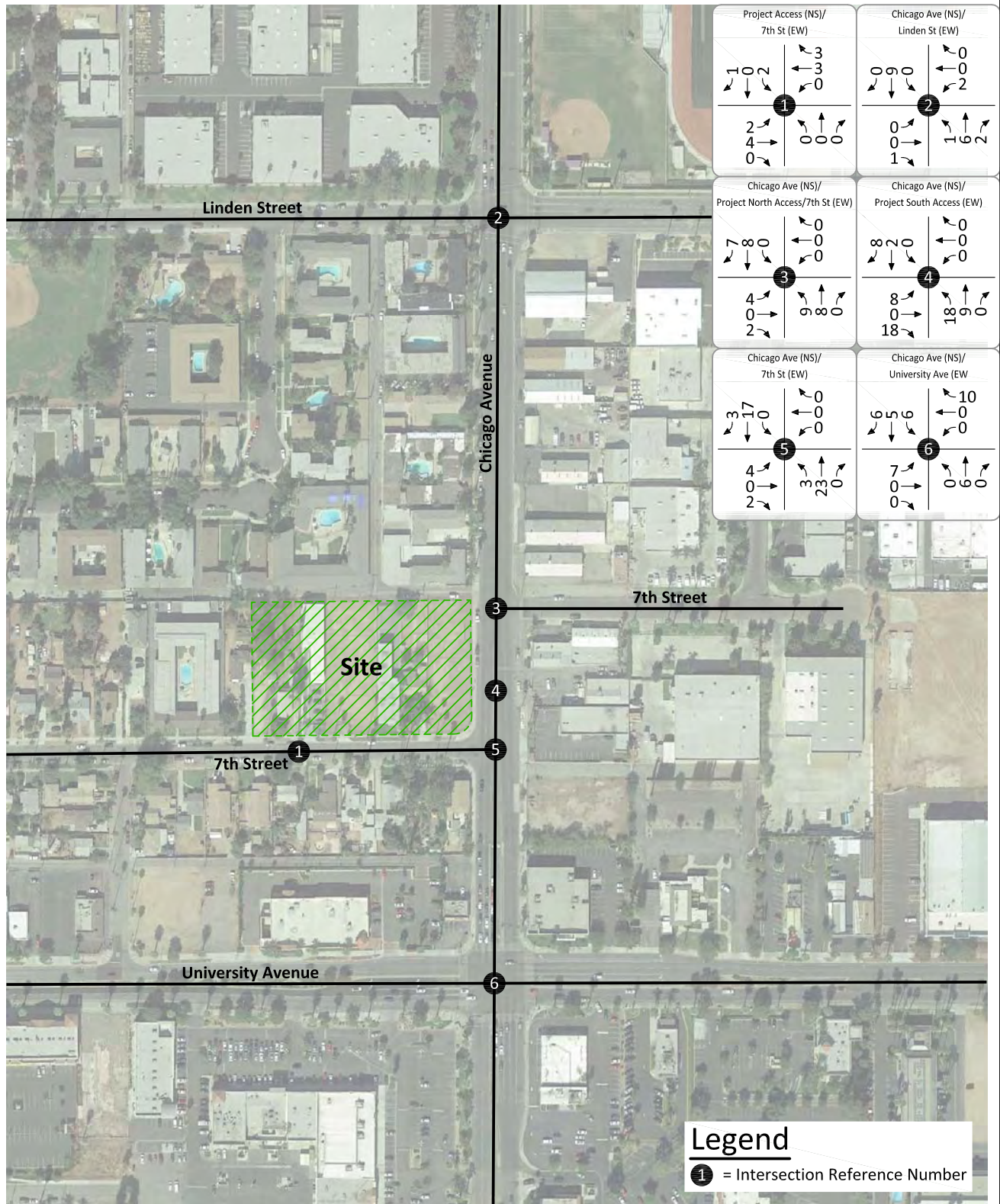


Figure 17
Project Evening Peak Hour Intersection Turning Movement Volumes



VI. EXISTING PLUS PROJECT TRAFFIC CONDITIONS

Once the project related trips are assigned to the existing street network and added to existing volumes, the traffic impact can be assessed. Figures 18 to 20 illustrate the Existing Plus Project traffic conditions.

A. Method of Projection

To assess Existing Plus Project traffic conditions, project trips are combined with existing traffic volumes.

B. Existing Plus Project Average Daily Traffic Volumes

Upon project completion and occupancy, the Existing Plus Project average daily traffic volumes are as illustrated on Figure 18.

C. Existing Plus Project Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The delay and Level of Service for Existing Plus Project traffic conditions have been calculated and are shown in Table 3. Existing Plus Project morning and evening peak hour intersection turning movement volumes are shown on Figures 19 and 20, respectively.

For Existing Plus Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
Project South Access (EW) - #4
7th Street (EW) - #5

The study intersections are projected to operate at acceptable Levels of Service during the peak hours for Existing Plus Project traffic conditions, with improvements.

Table 3

Existing Plus Project Intersection Delay and Level of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay-LOS ²	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Project Access (NS) at: 7th Street (EW) - #1	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	0.5	0.5	8.9-A	8.9-A
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	25.3-C	18.4-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	42.9-E	57.7-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	21.9-C	24.1-C
Project South Access (EW) - #4	CSS	0.5	1.5	0	0	2	d	0.5	0	0.5	0	0	0	23.0-C	44.0-E
- With Improvements ⁴	CSS	1	2	0	0	2	d	0.5	0	0.5	0	0	0	14.2-B	21.3-C
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	41.3-E	68.7-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	21.2-C	26.1-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.3-C	32.3-C

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

² Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 [Highway Capacity Manual](#), overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; CSS = Cross Street Stop

⁴ Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Figure 18
Existing Plus Project Average Daily Traffic Volumes

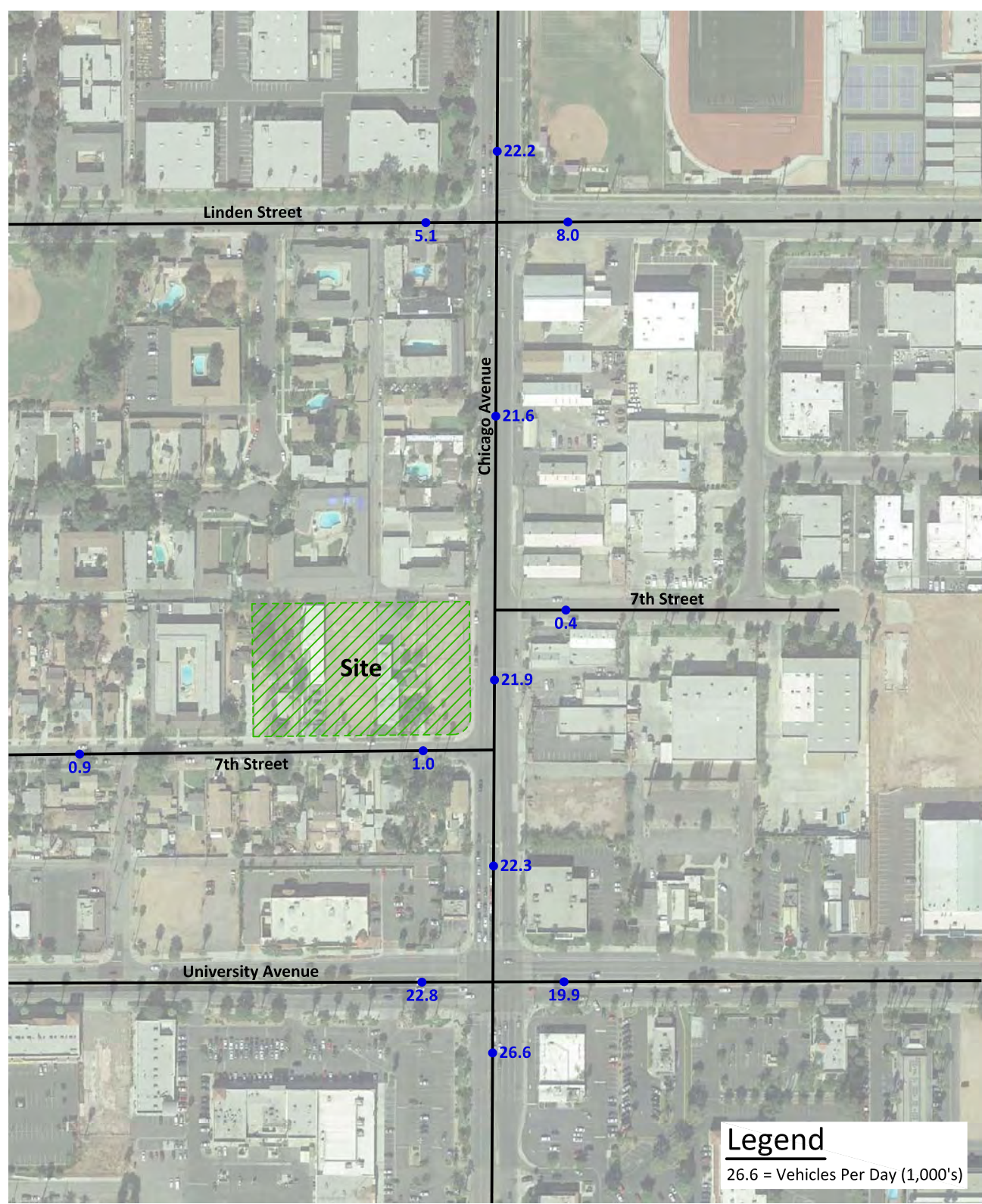


Figure 19
Existing Plus Project
Morning Peak Hour Intersection Turning Movement Volumes

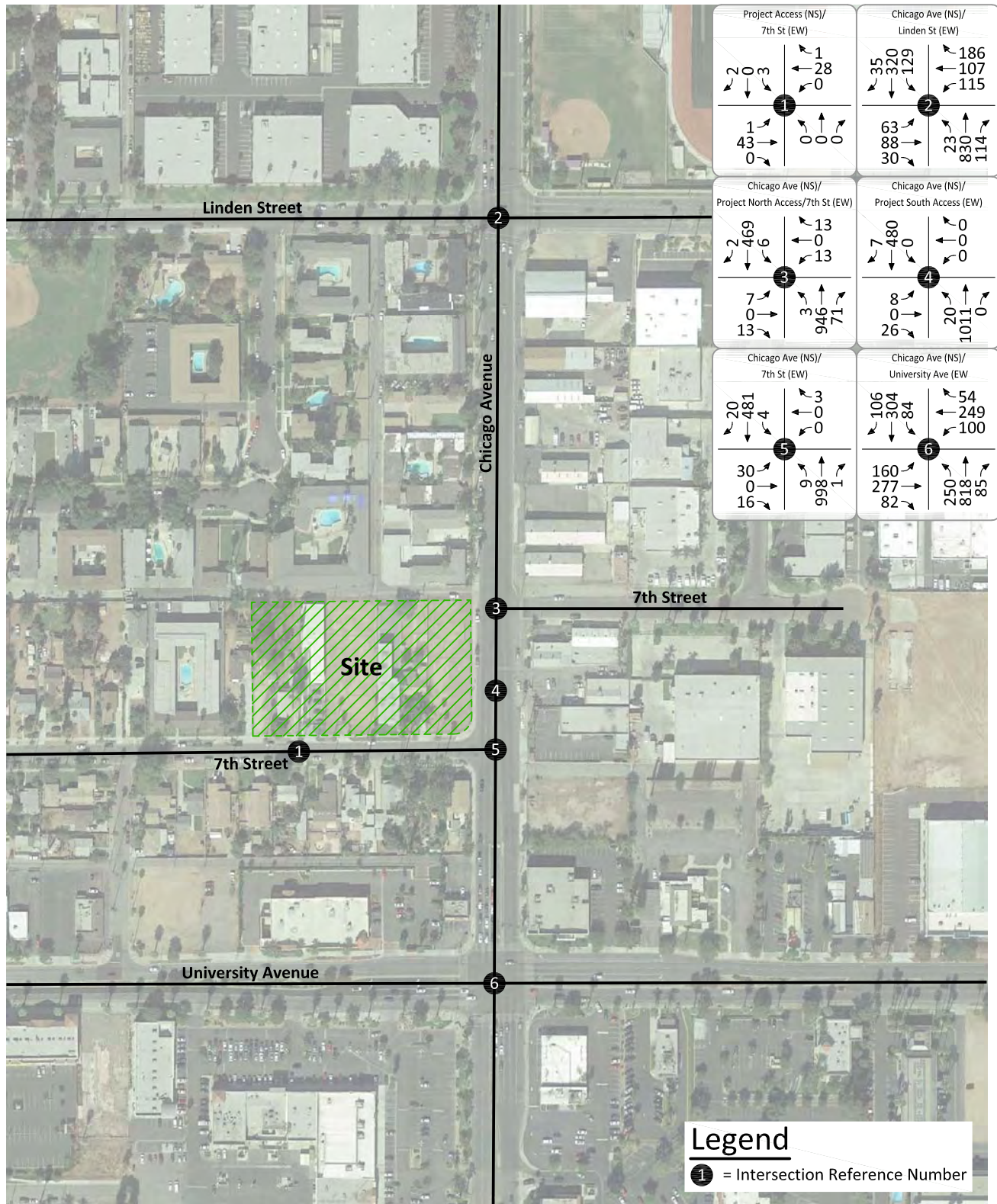
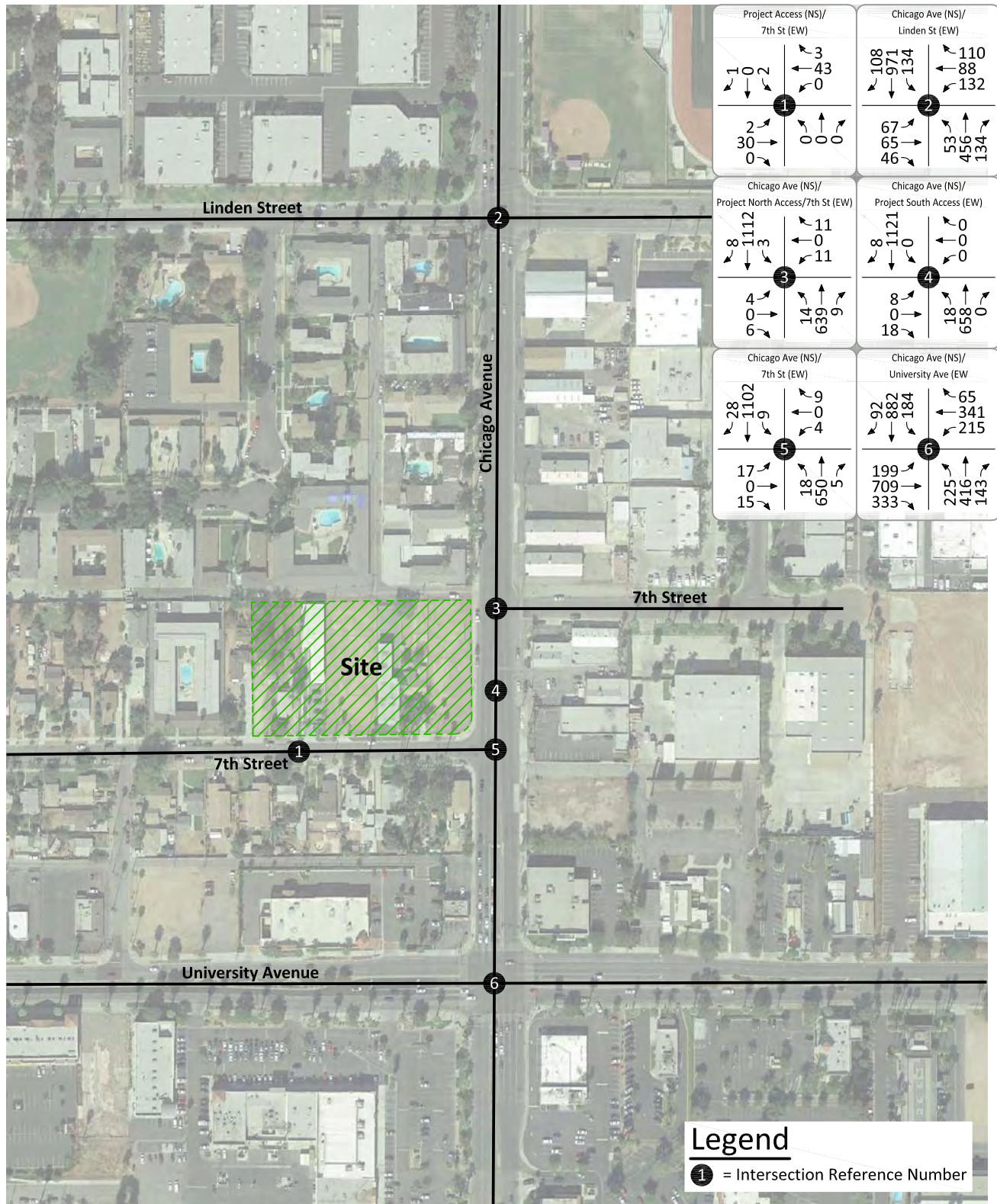


Figure 20
Existing Plus Project
Evening Peak Hour Intersection Turning Movement Volumes



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VII. OPENING YEAR TRAFFIC CONDITIONS

Figures 21 to 33 illustrate the Opening Year traffic conditions.

A. Method of Projection

To assess Opening Year traffic conditions, existing traffic volumes are combined with areawide growth. The Opening Year for analysis purposes in this report is 2020.

To account for areawide growth on roadways, traffic volumes have been calculated based on a “conservative” 2.0 percent annual growth rate of existing traffic volumes over the two (2) year period.

B. Other Development

Table 4 lists the proposed land uses for the other development (see Figure 21) and shows the daily and peak hour vehicle trips generated by each development in the study area. Lists of other potential developments within the study area have been provided by the Planning Department of the City of Riverside. Potential developments within the study area are included in the analysis if they are not currently built, they are approved, their approval has not expired, and they would contribute trips to the study intersections. Figures 22 through 24 contain the directional distribution and assignment of the other development trips that are anticipated to generate significant trips to the study area roadway network.

Figure 25 shows the average daily traffic volumes that can be expected for the other development. Other development morning and evening peak hour intersection turning movement volumes are shown on Figures 26 and 27, respectively.

C. Opening Year (2020) Average Daily Traffic Volumes

The Opening Year (2020) Without Project average daily traffic volumes are as illustrated on Figure 28 and Opening Year (2020) With Project average daily traffic volumes are as illustrated on Figure 29.

D. Opening Year (2020) Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The delay and Level of Service for Opening Year (2020) Without Project traffic conditions have been calculated and are shown in Table 5. Opening Year (2020) Without Project morning and evening peak hour intersection turning movement volumes are shown on Figures 30 and 31, respectively.

For Opening Year (2020) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the

following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
7th Street (EW) - #5

The study intersections are projected to operate at acceptable Levels of Service during the peak hours for Opening Year (2020) Without Project traffic conditions, with improvements.

The delay and Level of Service for Opening Year (2020) With Project traffic conditions have been calculated and are shown in Table 6. Opening Year (2020) With Project morning and evening peak hour intersection turning movement volumes are shown on Figures 32 and 33, respectively.

For Opening Year (2020) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
Project South Access (EW) - #4
7th Street (EW) - #5

The study intersection are projected to operate at acceptable Levels of Service during the peak hours for Opening Year (2020) With Project traffic conditions, with improvements.

E. Significant Transportation Impact

The City of Riverside allows Level of Service D to be used as a maximum acceptable threshold for the study intersections.

A significant impact occurs at a study intersection when the addition of project generated trips causes either peak hour Level of Service to degrade from acceptable Level of Service (A thru D) to unacceptable Level of Service (E or F) or peak hour delay to increase as follows:

Level of Service A/B	=	By 10.0 seconds
Level of Service C	=	By 8.0 seconds
Level of Service D	=	By 5.0 seconds
Level of Service E	=	By 2.0 seconds
Level of Service F	=	By 1.0 seconds

As shown in Table 7, the project site does significantly impact the following study intersections for Opening Year (2020) With Project traffic conditions, without improvements:

Chicago Avenue (NS) at:

Project North Access/7th Street (EW) - #3

Project South Access (EW) - #4

7th Street (EW) - #5

As shown in Table 7, the project site does not significantly impact the study intersections for Opening Year (2020) With Project traffic conditions, with improvements. The recommended mitigation measure is an extension of the north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary. Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would remain.

Table 4

Other Development Trip Generation¹

Traffic Analysis Zone	Name	Land Use	Quantity	Units ²	Peak Hour						Daily
					Morning			Evening			
					Inbound	Outbound	Total	Inbound	Outbound	Total	
1	P16-0168	Storage Facility	797	UN	6	5	11	8	8	16	143
	P18-0199	Industrial - Single Tenant	26.076	TSF	16	2	18	2	14	16	130
2	P14-0045	Apartment Complex	212	DU	22	76	98	77	46	123	1,551
3	P15-0877	Hotel	126	RM	35	25	60	39	37	76	1,053
Total					79	108	187	126	105	231	2,877

¹ Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 110, 151, 220, and 310.

² UN = Units; TSF = Thousand Square Feet; DU = Dwelling Units; RM = Rooms

Table 5

Opening Year (2020) Without Project Intersection Delay and Level of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay-LOS ²	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	26.9-C	18.8-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	44.5-E	59.3-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	22.7-C	24.8-C
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	41.4-E	68.5-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	21.6-C	26.5-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.6-C	40.4-D

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

² Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 [Highway Capacity Manual](#), overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; CSS = Cross Street Stop

⁴ Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 6

Opening Year (2020) With Project Intersection Delay and Level of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay-LOS ²	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Project Access (NS) at: 7th Street (EW) - #1	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	0.5	0.5	8.9-A	8.9-A
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	27.2-C	19.0-B
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	46.7-E	63.6-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	23.1-C	25.5-D
Project South Access (EW) - #4	CSS	0.5	1.5	0	0	2	d	0.5	0	0.5	0	0	0	24.2-C	48.3-E
- With Improvements ⁴	CSS	1	2	0	0	2	d	0.5	0	0.5	0	0	0	14.5-B	22.4-C
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	45.0-E	78.8-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	22.2-C	27.8-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	21.9-C	41.0-D

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

² Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 [Highway Capacity Manual](#), overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; CSS = Cross Street Stop

⁴ Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 7

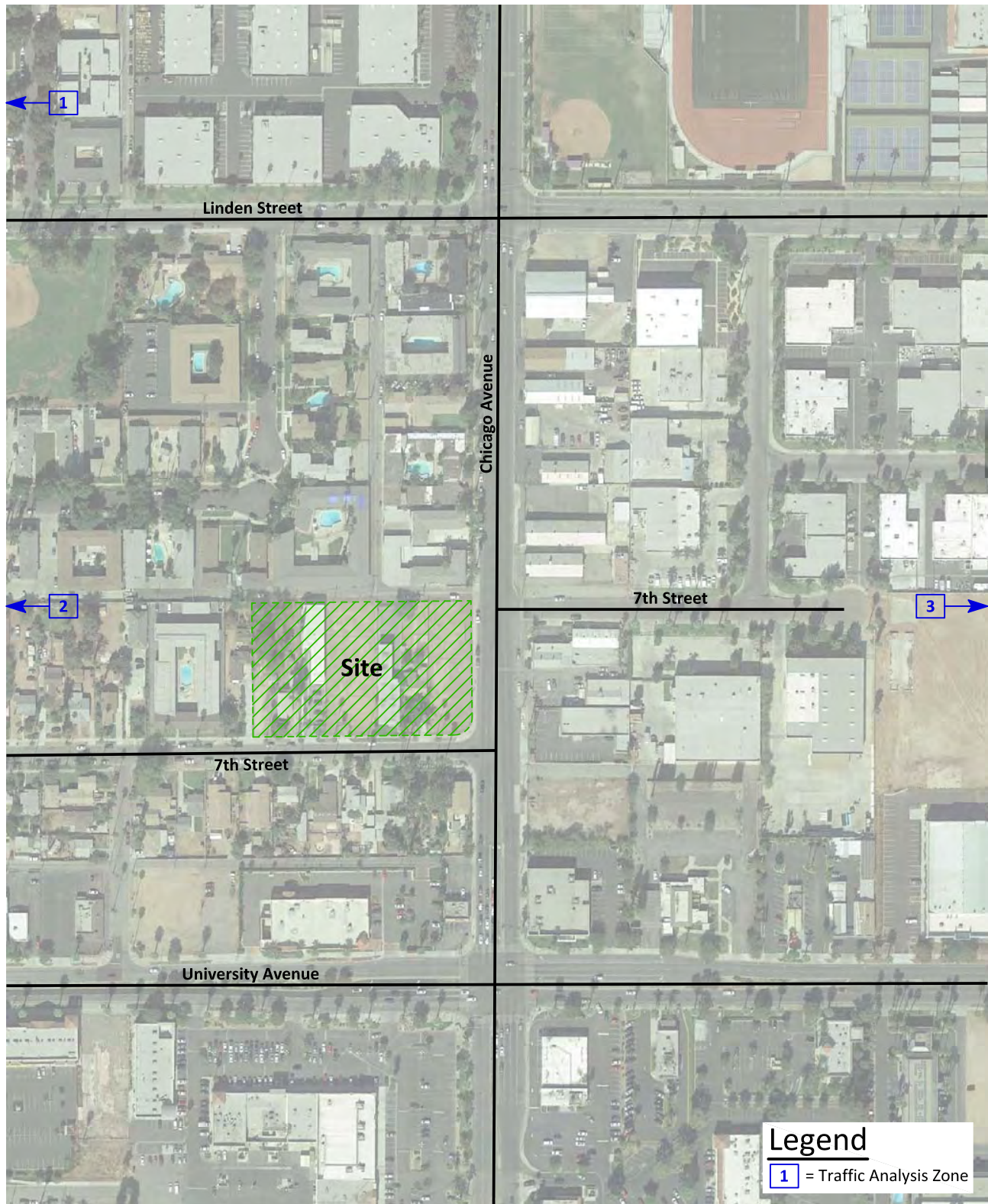
Opening Year (2020) With Project Traffic Contribution

Intersection	Peak Hour	Opening Year (2020)									
		Without Project		With Project							
				Without Improvements				With Improvements			
				Delay	LOS	Project Impact	Significant Impact ²	Delay	LOS	Project Impact	Significant Impact ²
Chicago Avenue (NS) at:											
Linden Street (EW) - #2	Morning	26.9	C	27.2	C	0.3	No				
	Evening	18.8	B	19.0	B	0.2	No				
Project North Access/7th Street (EW) - #3	Morning	44.5	E	46.7	E	2.2	Yes	23.1	C	-21.4	No
	Evening	59.3	F	63.6	F	4.3	No	25.5	D	-33.8	No
7th Street (EW) - #5	Morning	41.4	E	45.0	E	3.6	Yes	22.2	C	-19.2	No
	Evening	68.5	F	78.8	F	10.3	Yes	27.8	D	-40.7	No
University Avenue (EW) - #6	Morning	21.6	C	21.9	C	0.3	No				
	Evening	40.4	D	41.0	D	0.6	No				

¹ LOS = Level of Service

² A significant impact occurs at a study intersection when the addition of project generated trips adds 10.0 seconds of delay at an intersection operating at Level of Service A or B, 8.0 seconds of delay at an intersection operating at Level of Service C, 5.0 seconds of delay at an intersection operating at Level of Service D, 2.0 seconds of delay at an intersection operating at Level of Service E, or 1.0 seconds of delay at an intersection operating at Level of Service F.

Figure 21
Other Development Traffic Analysis Zone Map



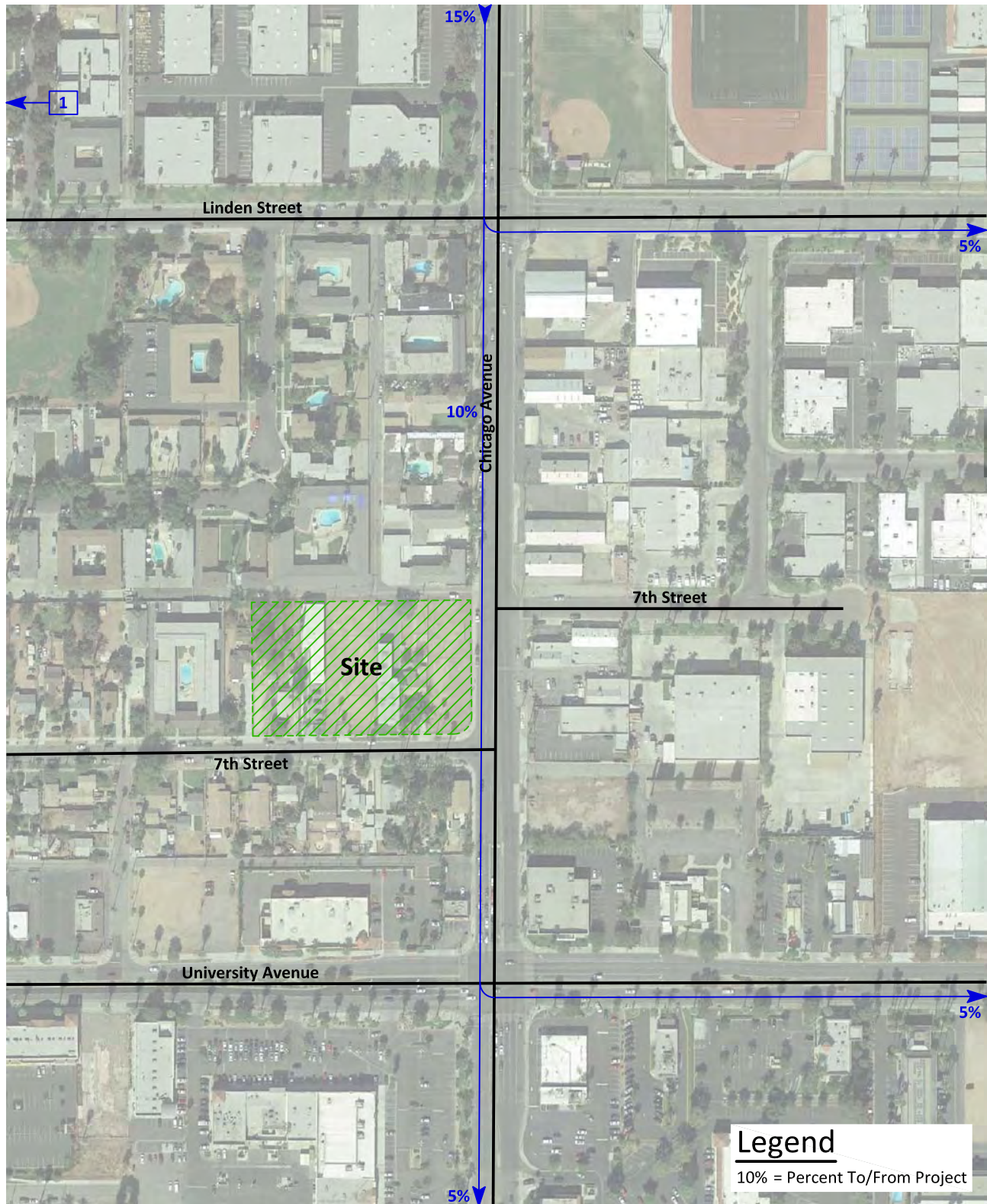
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Figure 22
Other Development Traffic Analysis Zone 1 Trip Distribution



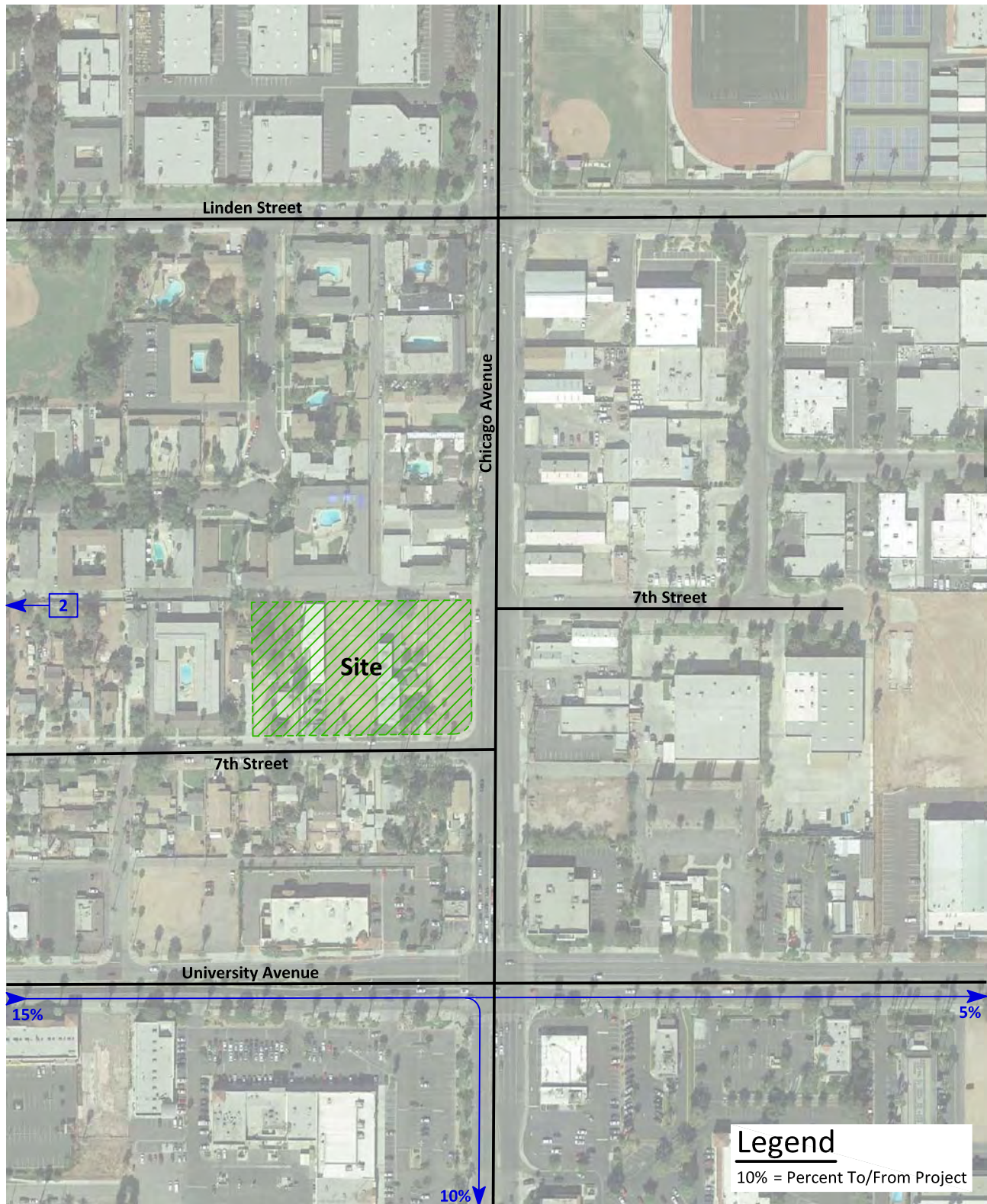
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Figure 23
Other Development Traffic Analysis Zone 2 Trip Distribution



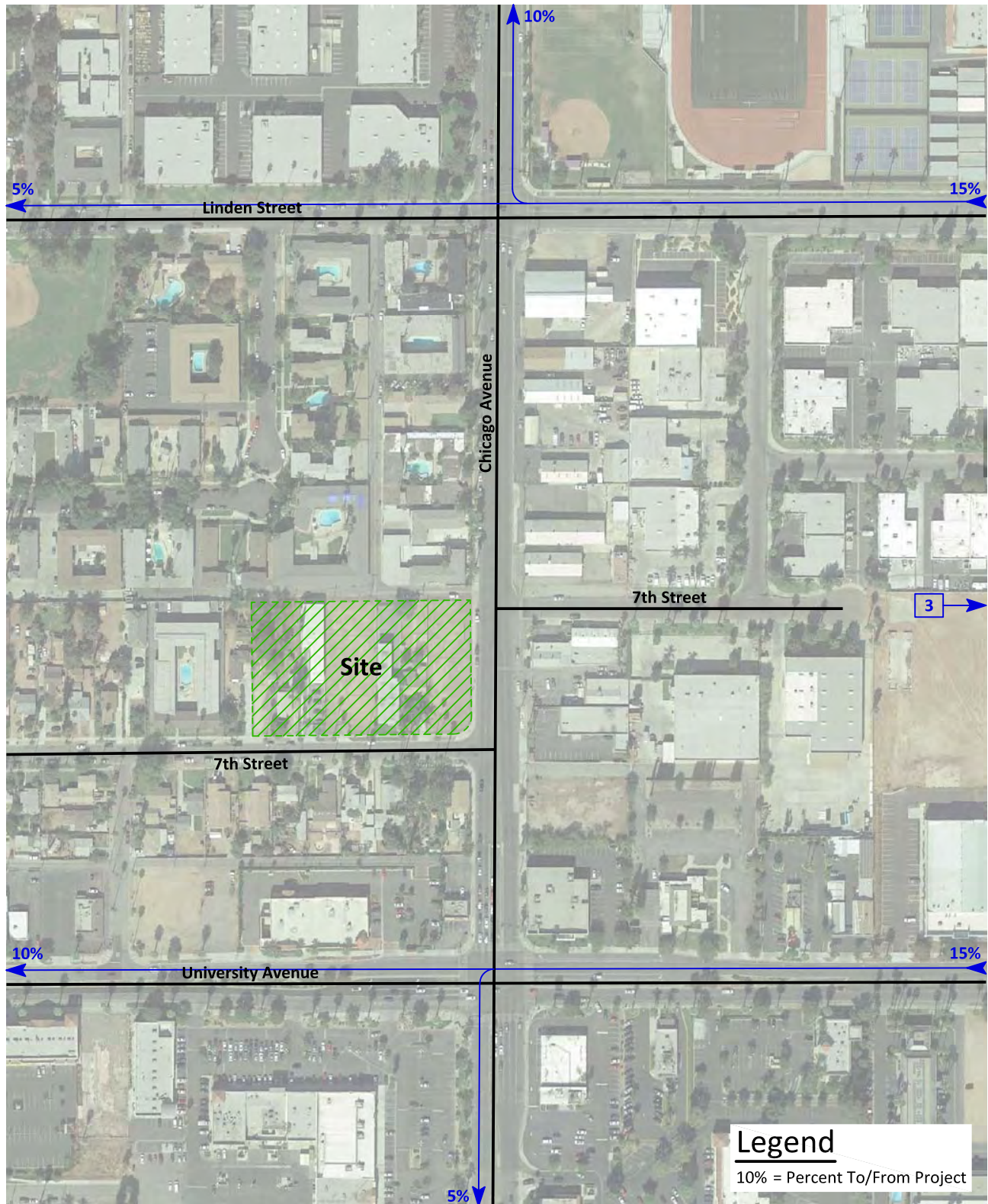
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Figure 24
Other Development Traffic Analysis Zone 3 Trip Distribution



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Figure 25
Other Development Average Daily Traffic Volumes

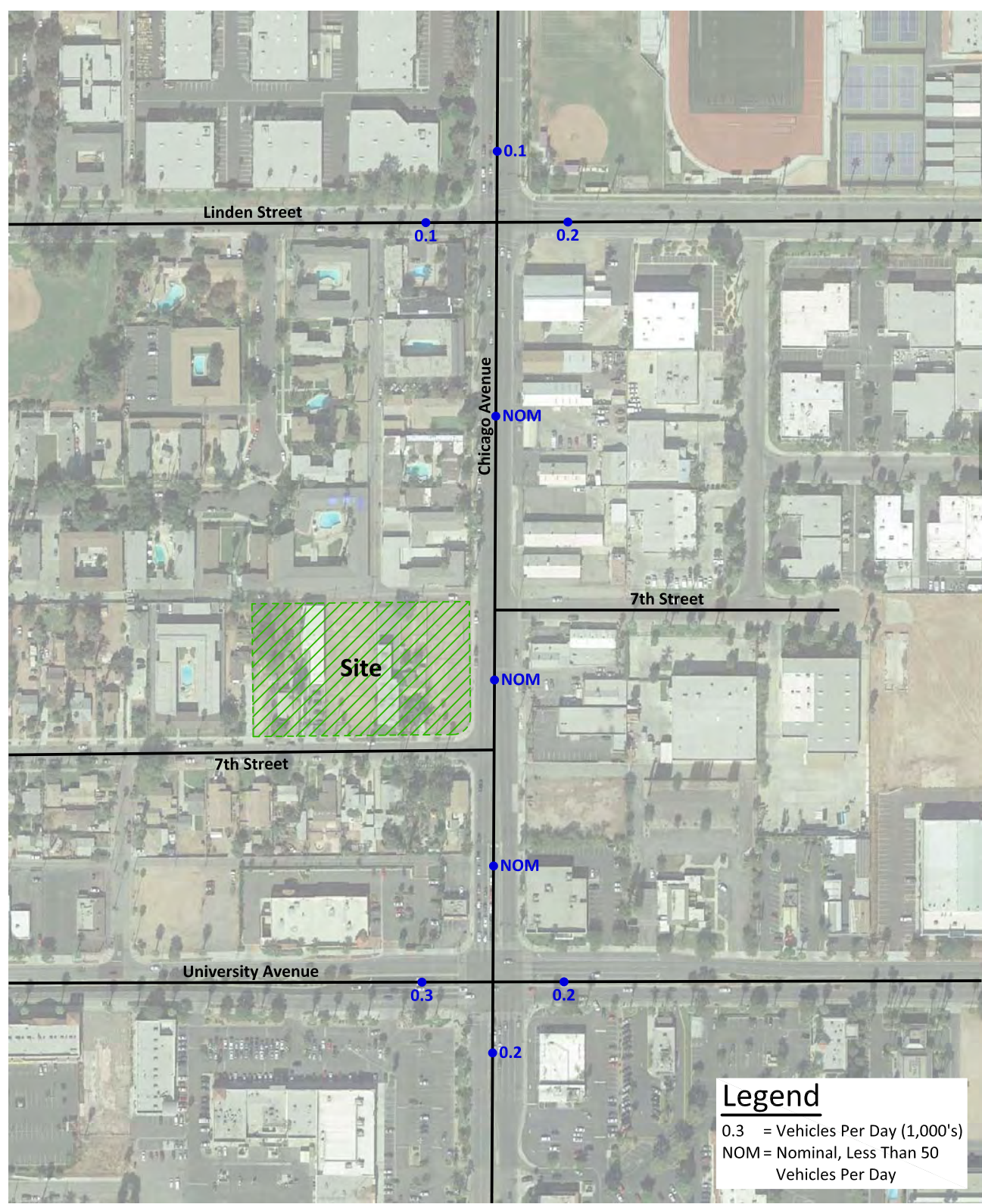


Figure 26
Other Development
Morning Peak Hour Intersection Turning Movement Volumes

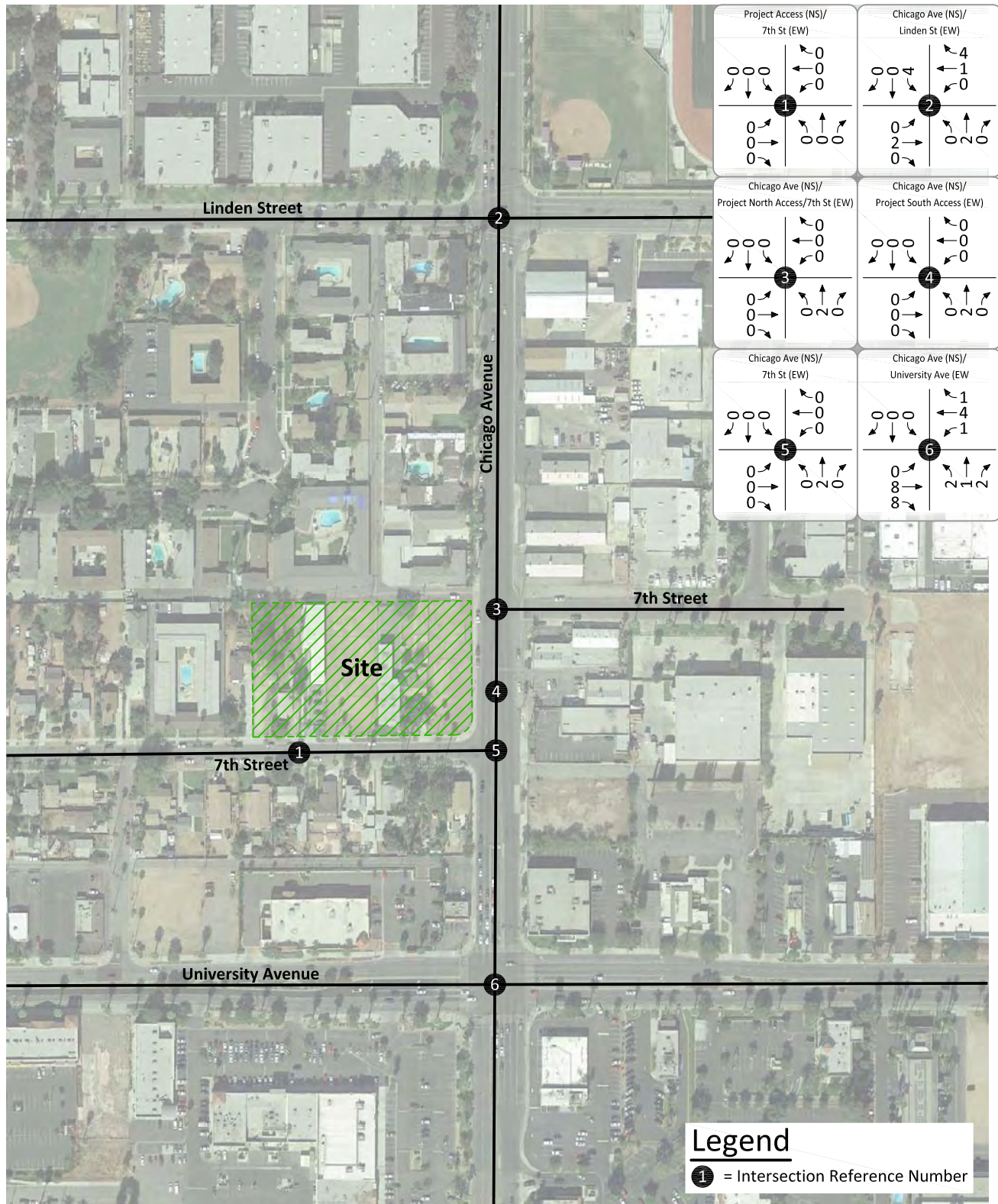


Figure 27
Other Development
Evening Peak Hour Intersection Turning Movement Volumes

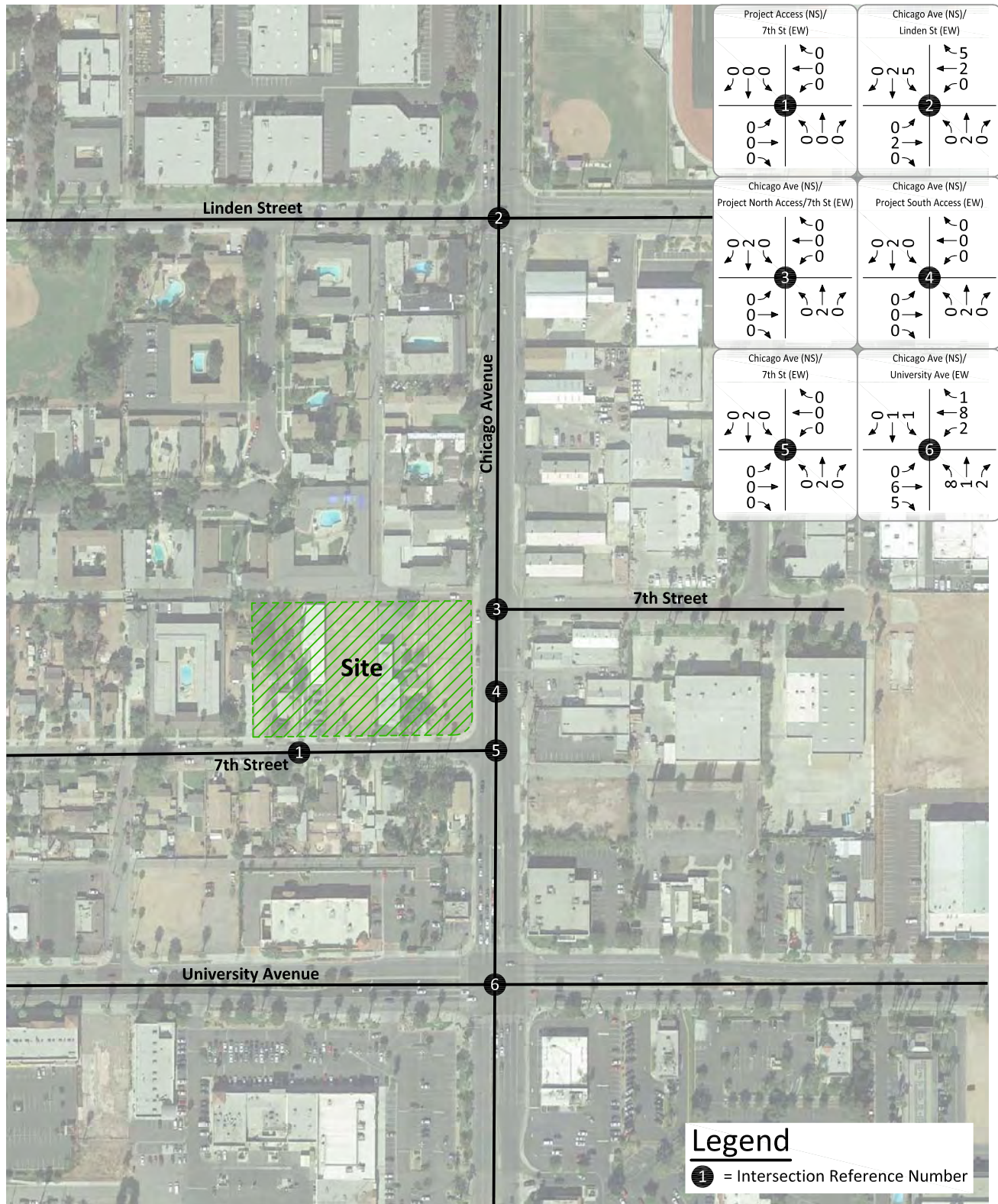
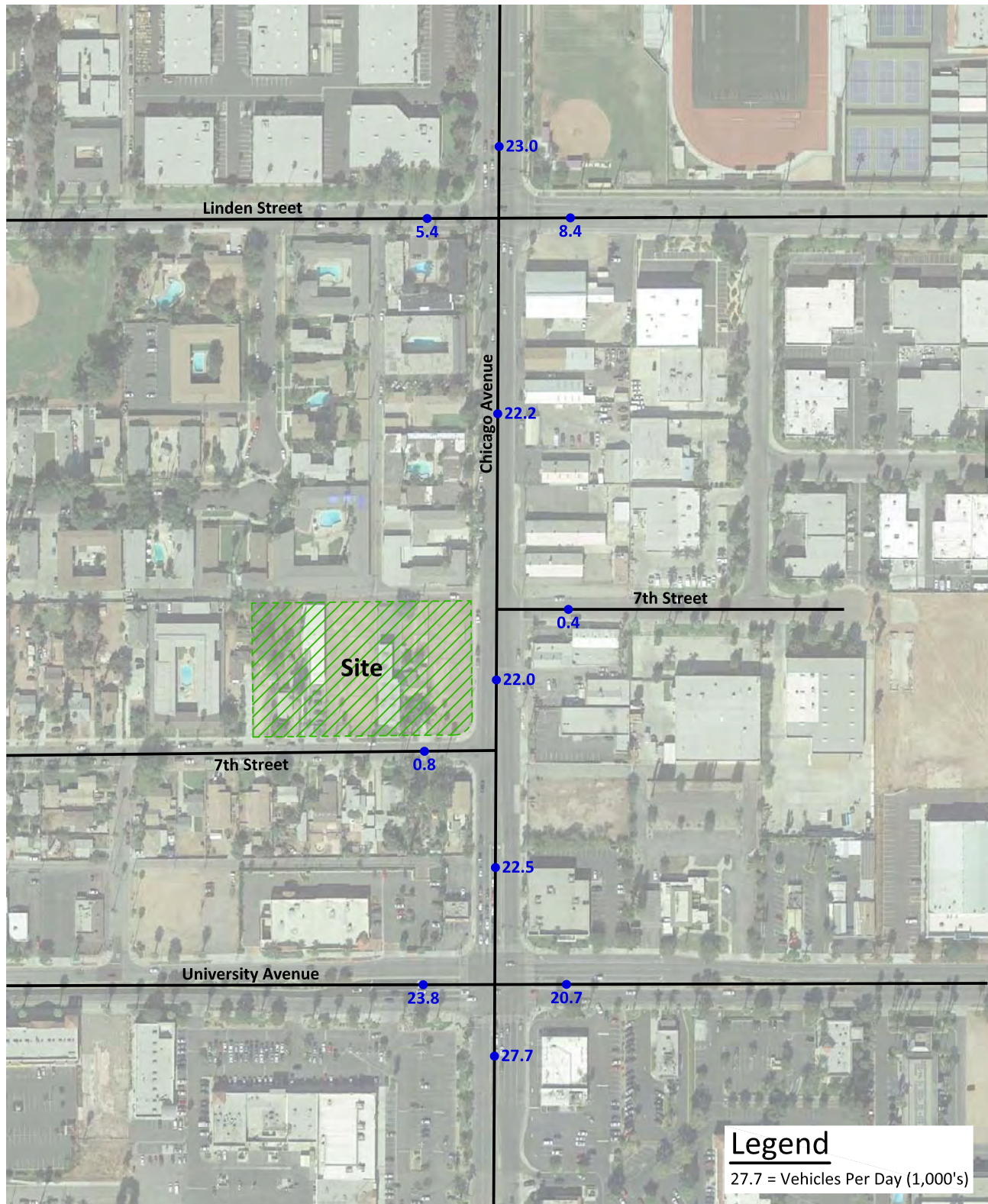


Figure 28
Opening Year (2020) Without Project Average Daily Traffic Volumes



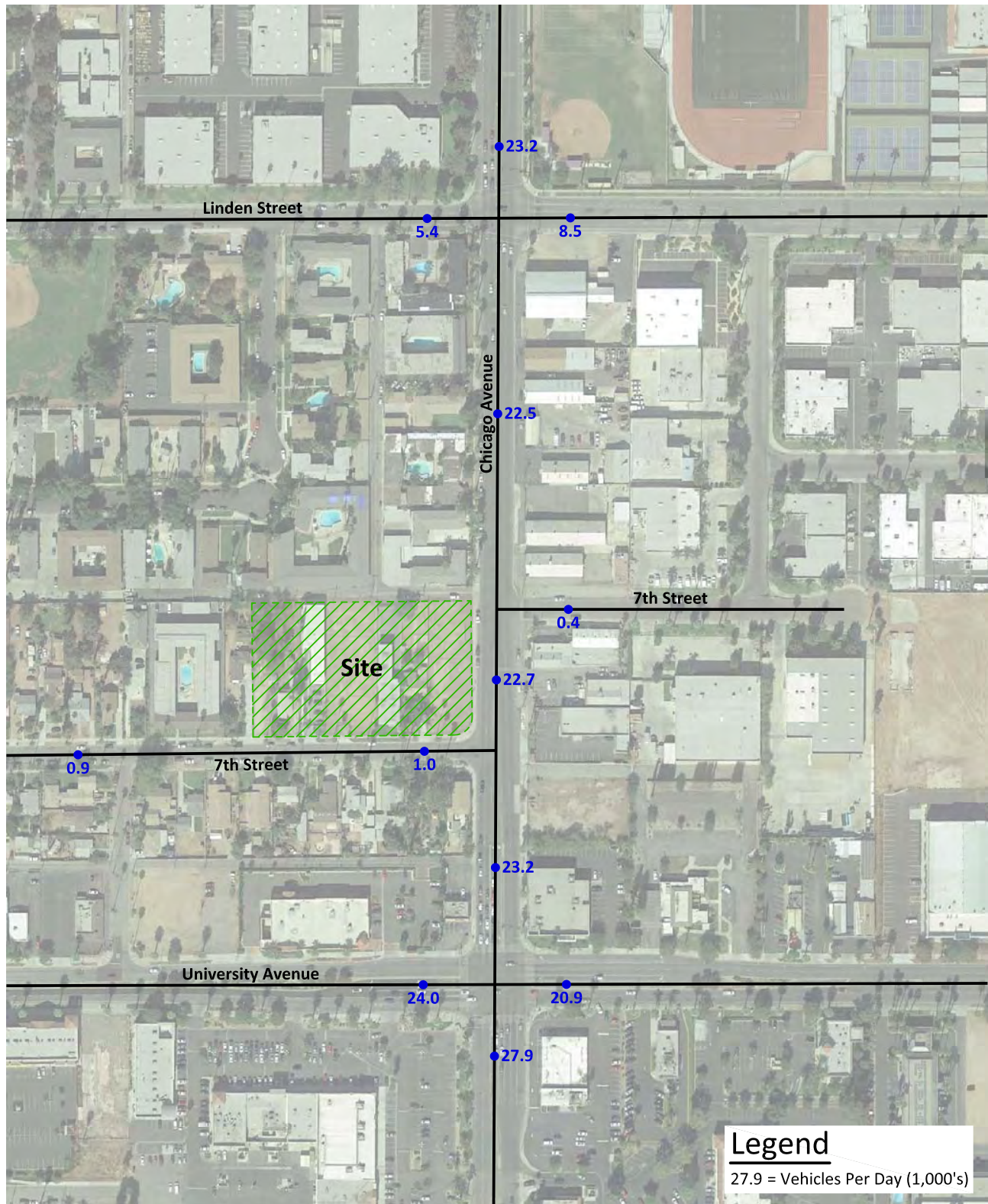
KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE



JN 7376

Figure 29
Opening Year (2020) With Project Average Daily Traffic Volumes



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE



JN 7376

Figure 30
Opening Year (2020) Without Project
Morning Peak Hour Intersection Turning Movement Volumes

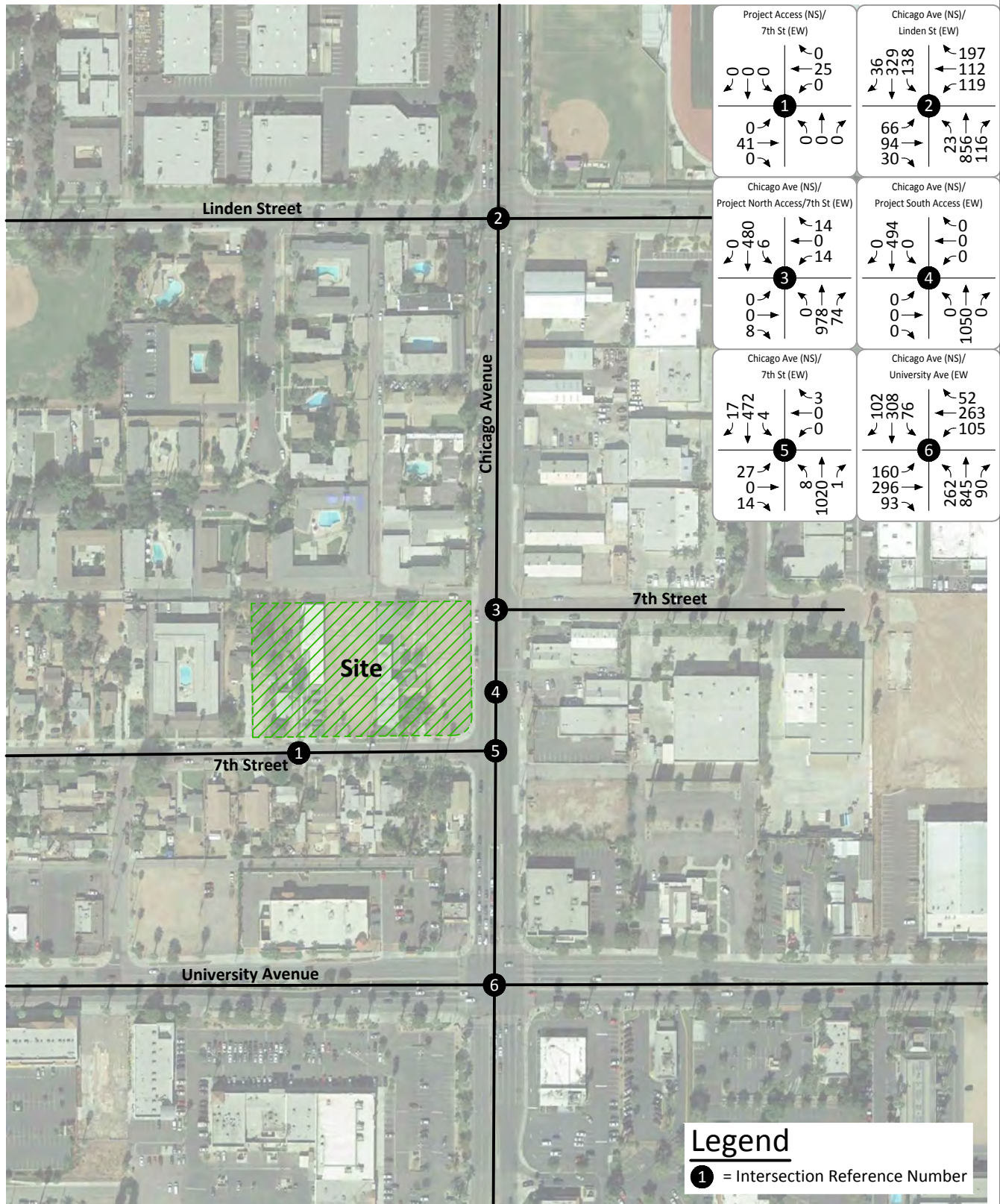


Figure 31
Opening Year (2020) Without Project
Evening Peak Hour Intersection Turning Movement Volumes

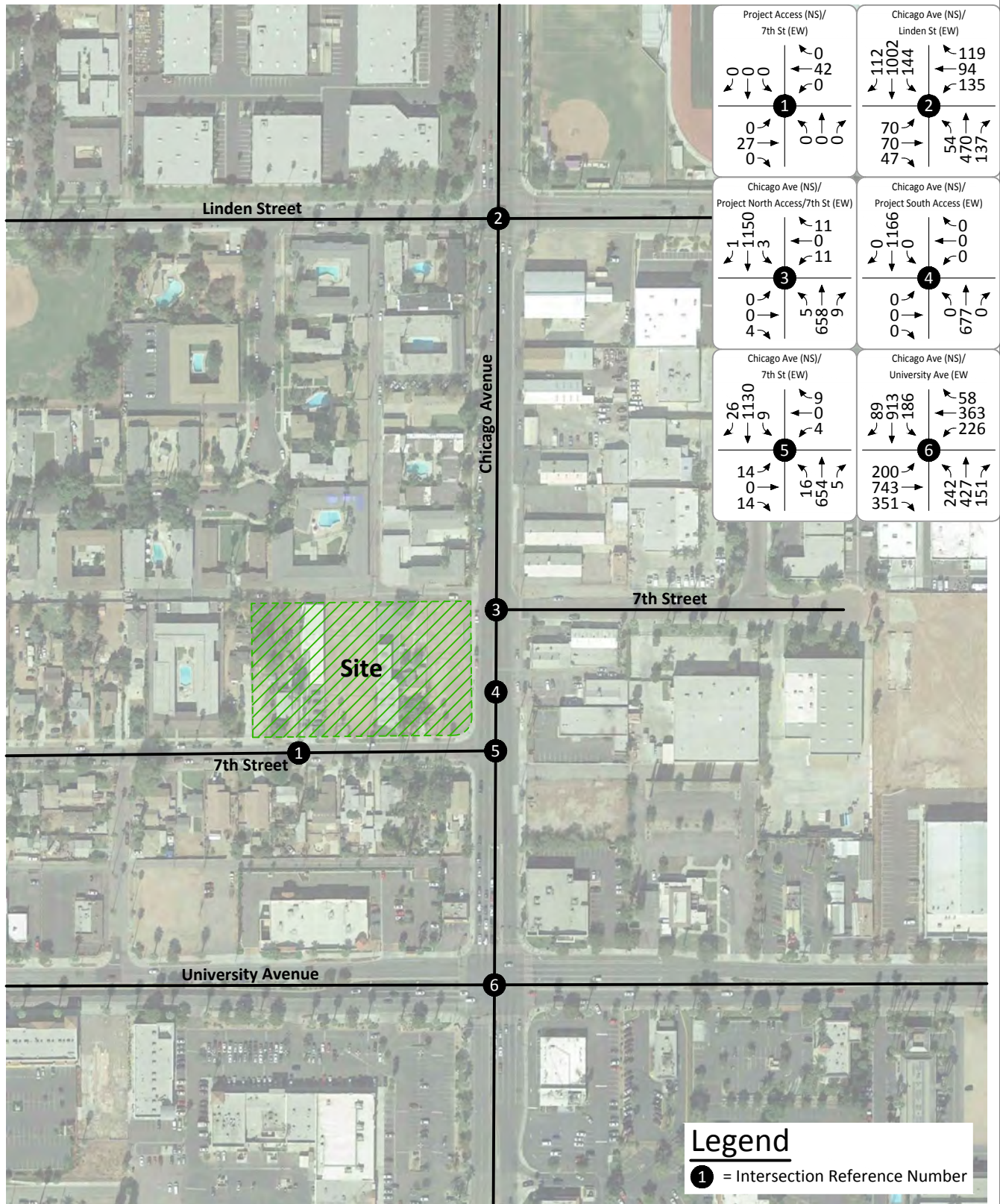
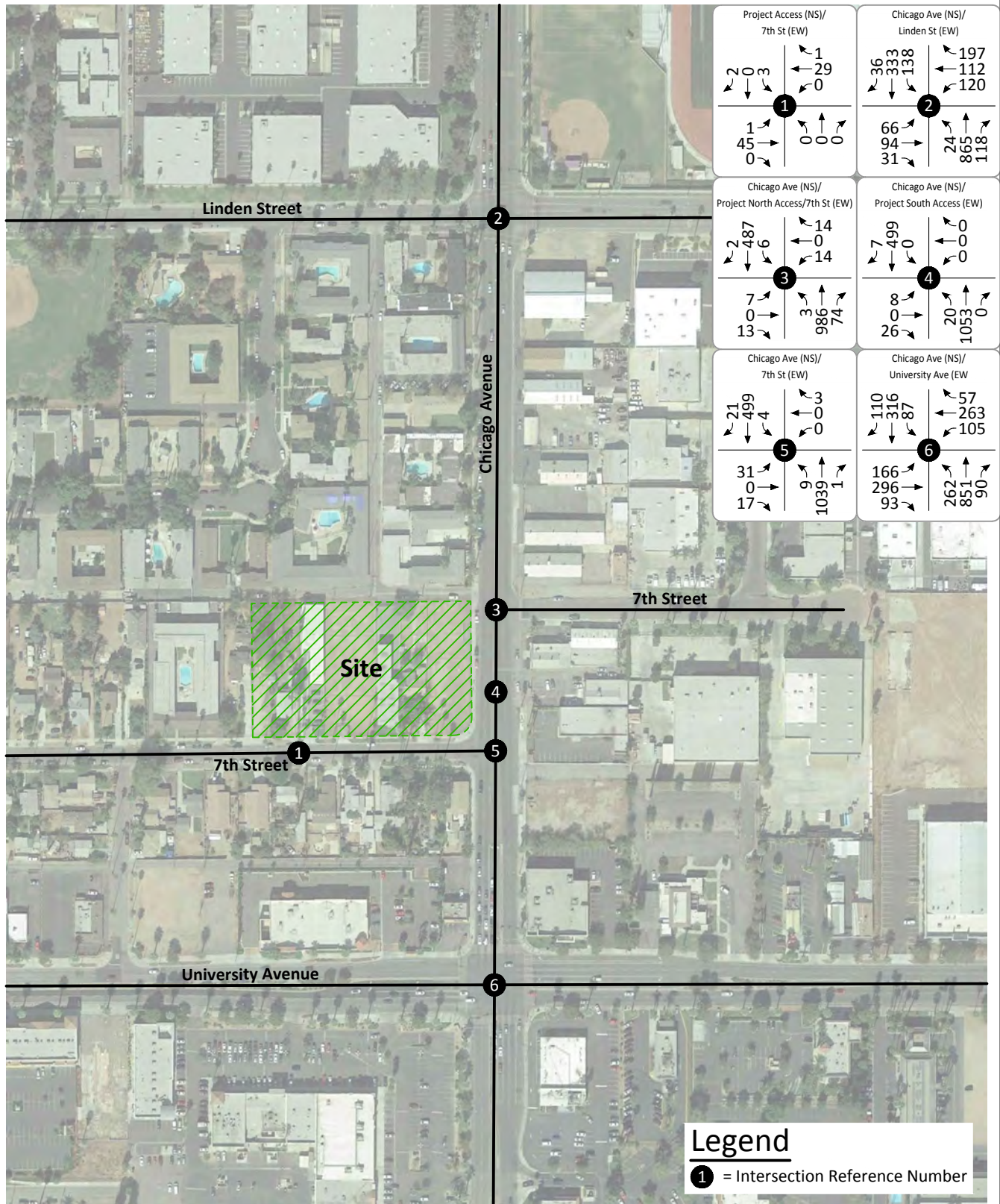


Figure 32
Opening Year (2020) With Project
Morning Peak Hour Intersection Turning Movement Volumes



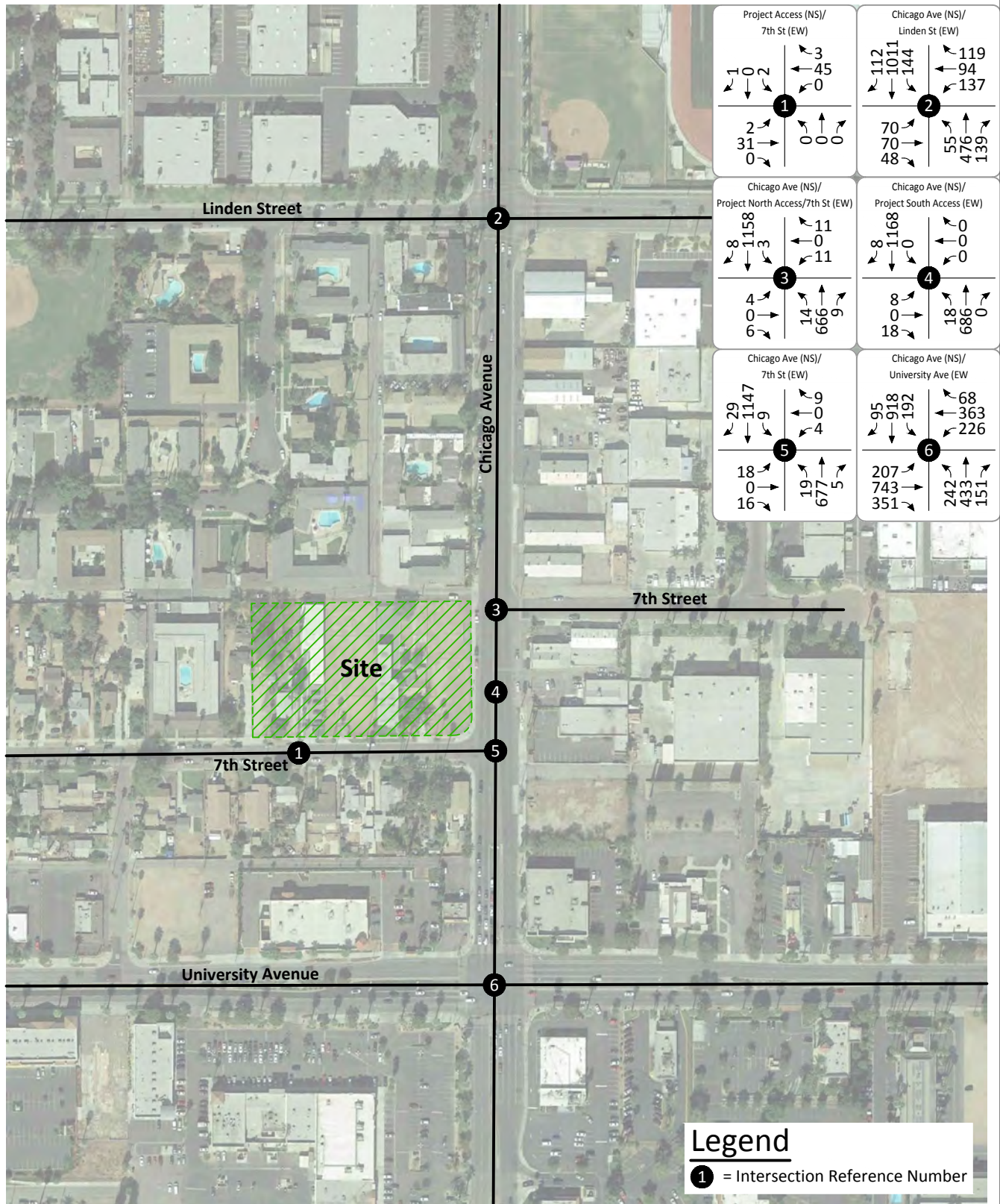
KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE



JN 7376

Figure 33
Opening Year (2020) With Project
Evening Peak Hour Intersection Turning Movement Volumes



KUNZMAN ASSOCIATES, INC.

OVER 40 YEARS OF EXCELLENT SERVICE



JN 7376

VIII. BUILDOUT YEAR (2025) TRAFFIC CONDITIONS

Figures 34 to 39 illustrate the Buildout Year (2025) traffic conditions.

A. Method of Projection

A Buildout Year (2025) analysis has been included as the project is undertaking a General Plan Amendment.

To assess Buildout Year traffic conditions, existing traffic volumes are combined with areawide growth and other development trips. The Buildout Year for analysis purposes in this report is 2025.

To account for areawide growth on roadways, traffic volumes have been calculated based on a “conservative” 2.0 percent annual growth rate of existing traffic volumes over the seven (7) year period.

B. Buildout Year (2025) Average Daily Traffic Volumes

The Buildout Year (2025) Without Project average daily traffic volumes are as illustrated on Figure 34 and Buildout Year (2025) With Project average daily traffic volumes are as illustrated on Figure 35.

C. Buildout Year (2025) Intersection Delay

The technique used to assess the capacity needs of an intersection is known as the intersection delay methodology (see Appendix D). To calculate delay, the traffic volumes using the intersection are compared with the capacity of the intersection.

The delay and Level of Service for Buildout Year (2025) Without Project traffic conditions have been calculated and are shown in Table 8. Buildout Year (2025) Without Project morning and evening peak hour intersection turning movement volumes are shown on Figures 36 and 37, respectively.

For Buildout Year (2025) Without Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
7th Street (EW) - #5

The study intersections are projected to operate at acceptable Levels of Service during the peak hours for Buildout Year (2025) Without Project traffic conditions, with improvements.

The delay and Level of Service for Buildout Year (2025) With Project traffic conditions have been calculated and are shown in Table 7. Buildout Year (2025) With Project morning and evening peak hour intersection turning movement volumes are shown on Figures 38 and 39, respectively.

For Buildout Year (2025) With Project traffic conditions, the study intersections are projected to operate at acceptable Levels of Service during the peak hours, except for the following study intersections that are projected to operate at unacceptable Levels of Service during the peak hours, without improvements:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
Project South Access (EW) - #4
7th Street (EW) - #5

The study intersection are projected to operate at acceptable Levels of Service during the peak hours for Buildout Year (2025) With Project traffic conditions, with improvements.

D. Significant Transportation Impact

The City of Riverside allows Level of Service D to be used as a maximum acceptable threshold for the study intersections.

A significant impact occurs at a study intersection when the addition of project generated trips causes either peak hour Level of Service to degrade from acceptable Level of Service (A thru D) to unacceptable Level of Service (E or F) or peak hour delay to increase as follows:

Level of Service A/B	=	By 10.0 seconds
Level of Service C	=	By 8.0 seconds
Level of Service D	=	By 5.0 seconds
Level of Service E	=	By 2.0 seconds
Level of Service F	=	By 1.0 seconds

As shown in Table 10, the project site does significantly impact the following study intersections for Buildout Year (2025) With Project traffic conditions, without improvements:

Chicago Avenue (NS) at:
Project North Access/7th Street (EW) - #3
Project South Access (EW) - #4
7th Street (EW) - #5

As shown in Table 10, the project site does not significantly impact the study intersections for Buildout Year (2025) With Project traffic conditions, with improvements. The recommended mitigation measure is an extension of the painted north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary. Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would remain.

E. Fair Share Analysis

Table 11 exhibits the recommended mitigation measures and includes the fair share analysis. The project's pro-rata share traffic contribution has also been calculated for the Buildout Year (2025) With Project traffic scenario at the impacted intersections. The pro rata contribution has been calculated based on the project peak hour traffic contributed to the improvement location relative to the total new peak hour Buildout Year (2025) With Project traffic volume.

Table 8

Buildout Year (2025) Without Project Intersection Delay and Level of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay-LOS ²	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	31.5-C	20.3-C
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	57.2-F	79.2-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	26.0-D	28.6-D
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	52.7-F	97.6-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	24.5-C	31.5-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	23.2-C	44.7-D

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

² Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; CSS = Cross Street Stop

⁴ Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 9

Buildout Year (2025) With Project Intersection Delay and Level of Service

Intersection	Traffic Control ³	Intersection Approach Lanes ¹												Peak Hour Delay-LOS ²	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Project Access (NS) at: 7th Street (EW) - #1	CSS	0	0	0	0.5	0	0.5	0.5	0.5	0	0	0.5	0.5	9.0-A	9.0-A
Chicago Avenue (NS) at:															
Linden Street (EW) - #2	TS	1	1.5	0.5	1	2	1	1	0.5	0.5	1	1	1	31.8-C	20.5-C
Project North Access/7th Street (EW) - #3	CSS	0.5	1.5	d	0.5	1.5	d	0	<1>	0	0	<1>	0	59.7-F	86.0-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	26.6-D	29.5-D
Project South Access (EW) - #4	CSS	0.5	1.5	0	0	2	d	0.5	0	0.5	0	0	0	27.9-D	62.2-F
- With Improvements ⁴	CSS	1	2	0	0	2	d	0.5	0	0.5	0	0	0	15.3-C	25.4-D
7th Street (EW) - #5	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	57.8-F	115.1-F
- With Improvements ⁴	CSS	1	2	d	0.5	1.5	d	0	<1>	0	0	<1>	0	25.2-D	33.1-D
University Avenue (EW) - #6	TS	2	2	1	2	1.5	0.5	2	2	1>	2	2	1	23.5-C	44.7-D

¹ When a right turn lane is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.

L = Left; T = Through; R = Right; <1> = Shared Left/Through/Right Turn Lane; > = Right Turn Overlap; d = De Facto Right Turn Lane; **BOLD** = Improvement

² Delay and Level of Service have been calculated using the following analysis software: Vistro, Version 5.00-03. Per the 2010 Highway Capacity Manual, overall average intersection delay and Level of Service are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control. The delay and Level of Service for the worst individual movement (or movements sharing a single lane) are shown.

³ TS = Traffic Signal; CSS = Cross Street Stop

⁴ Improvement includes extension of the painted north-south two-way left turn median from its current occurrence south of the project, to the project's north boundary.

Table 10

Buildout Year (2025) With Project Traffic Contribution

Intersection	Peak Hour	Buildout Year (2025)									
		Without Project		With Project							
				Without Improvements				With Improvements			
				Delay	LOS	Project Impact	Significant Impact ²	Delay	LOS	Project Impact	Significant Impact ²
Chicago Avenue (NS) at:											
Linden Street (EW) - #2	Morning	31.5	C	31.8	C	0.3	No				
	Evening	20.3	C	20.5	C	0.2	No				
Project North Access/7th Street (EW) - #3	Morning	57.2	F	59.7	F	2.5	Yes	26.6	D	-30.6	No
	Evening	79.2	F	86.0	F	6.8	No	29.5	D	-49.7	No
7th Street (EW) - #5	Morning	52.7	F	57.8	F	5.1	Yes	25.2	D	-27.5	No
	Evening	97.6	F	115.	F	17.4	Yes	33.1	D	-64.5	No
University Avenue (EW) - #6	Morning	23.2	C	23.5	C	0.3	No				
	Evening	44.7	D	44.7	D	0.0	No				

¹ LOS = Level of Service

² A significant impact occurs at a study intersection when the addition of project generated trips adds 10.0 seconds of delay at an intersection operating at Level of Service A or B, 8.0 seconds of delay at an intersection operating at Level of Service C, 5.0 seconds of delay at an intersection operating at Level of Service D, 2.0 seconds of delay at an intersection operating at Level of Service E, or 1.0 seconds of delay at an intersection operating at Level of Service F.

Table 11

Recommended Intersection Mitigation Measures and Project Fair Share Contribution

Intersection	Recommended Mitigation Measure	Peak Hour	Existing Traffic Volume	Buildout Year (2025) With Project Traffic Volume	New Trips	Project Trips	Project Share of New Trips
Chicago Avenue (NS) at: Project North Access/7th Street (EW) - #3 7th Street (EW) - #5	Restriping to provide north-south two-way left turn median	Morning	1,511	1,772	261	32	12.3%
		Evening	1,779	2,089	310	38	12.3%
	Restriping to provide north-south two-way left turn median	Morning	1,504	1,789	285	58	20.4%
		Evening	1,805	2,132	327	52	15.9%

Figure 34
Buildout Year (2025) Without Project Average Daily Traffic Volumes

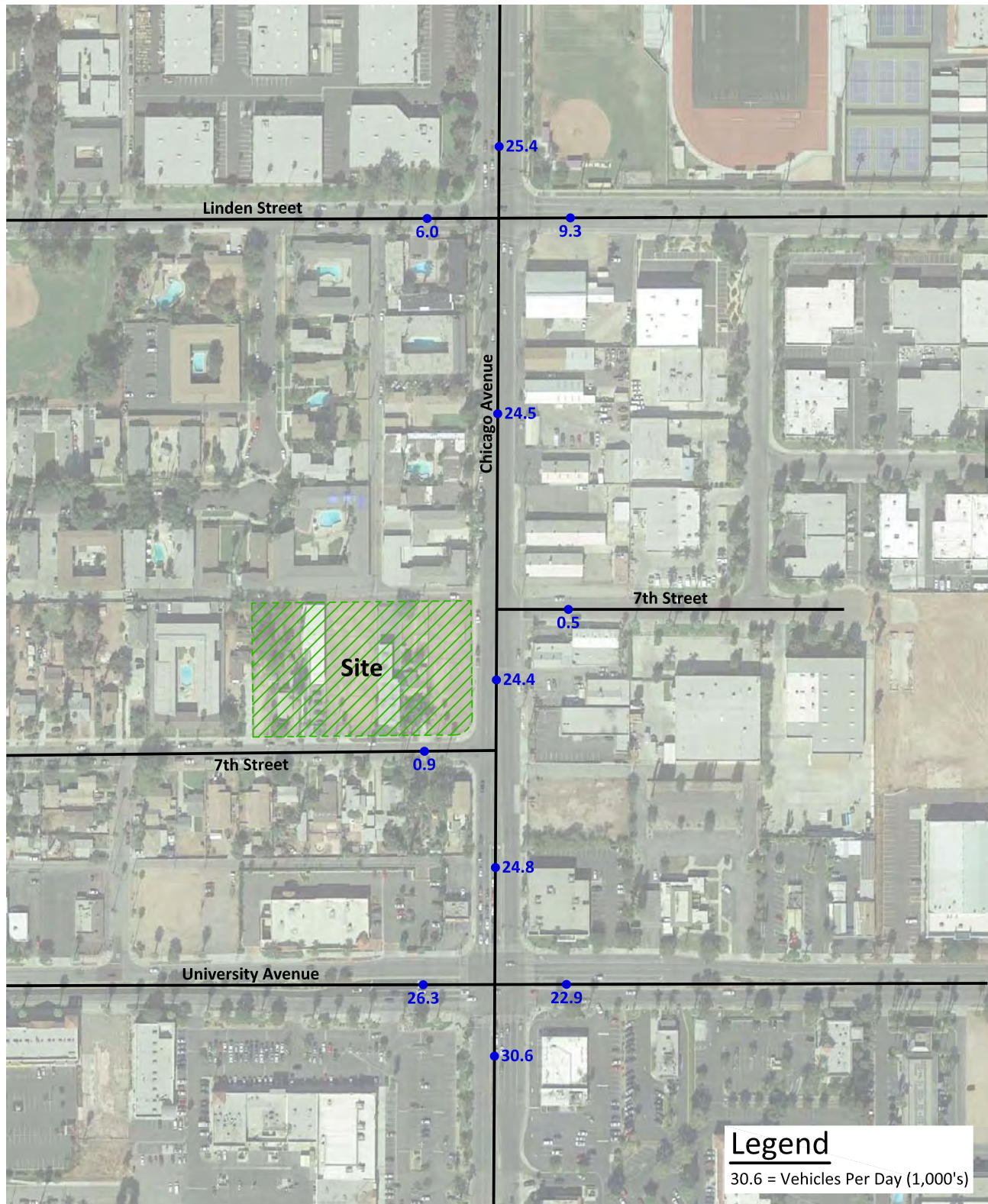
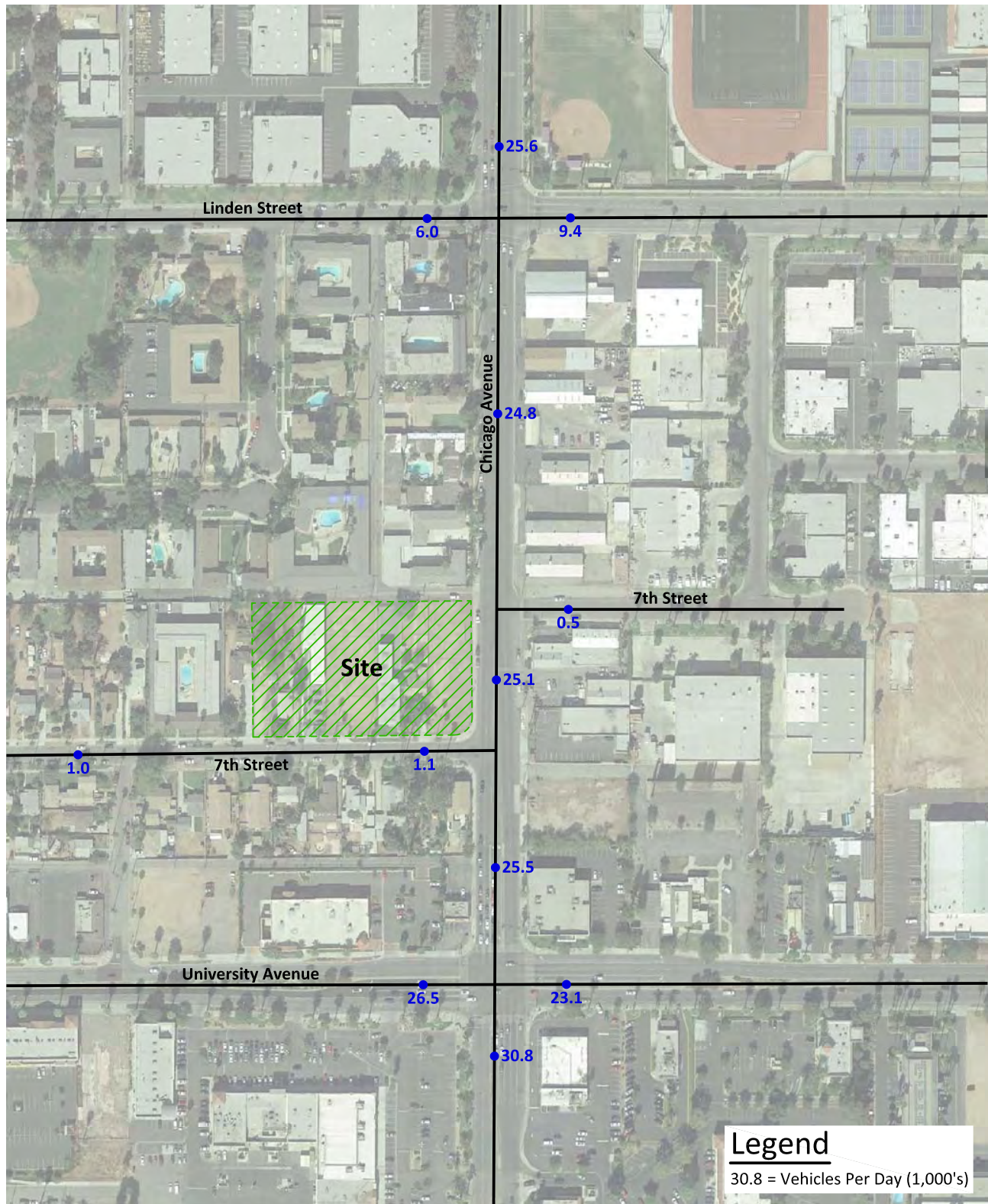


Figure 35
Buildout Year (2025) With Project Average Daily Traffic Volumes



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Figure 36
Buildout Year (2025) Without Project
Morning Peak Hour Intersection Turning Movement Volumes

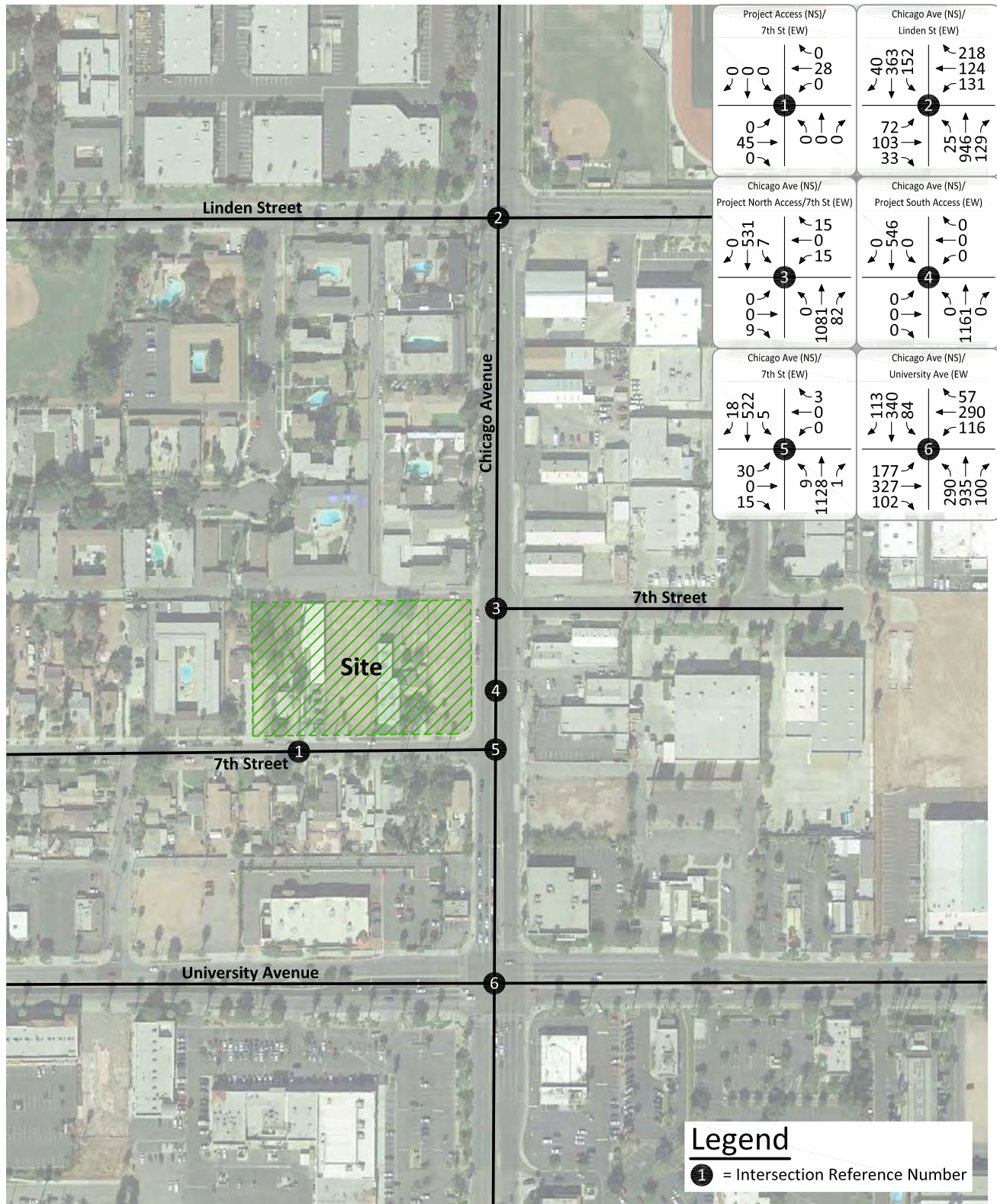


Figure 37
Buildout Year (2025) Without Project
Evening Peak Hour Intersection Turning Movement Volumes

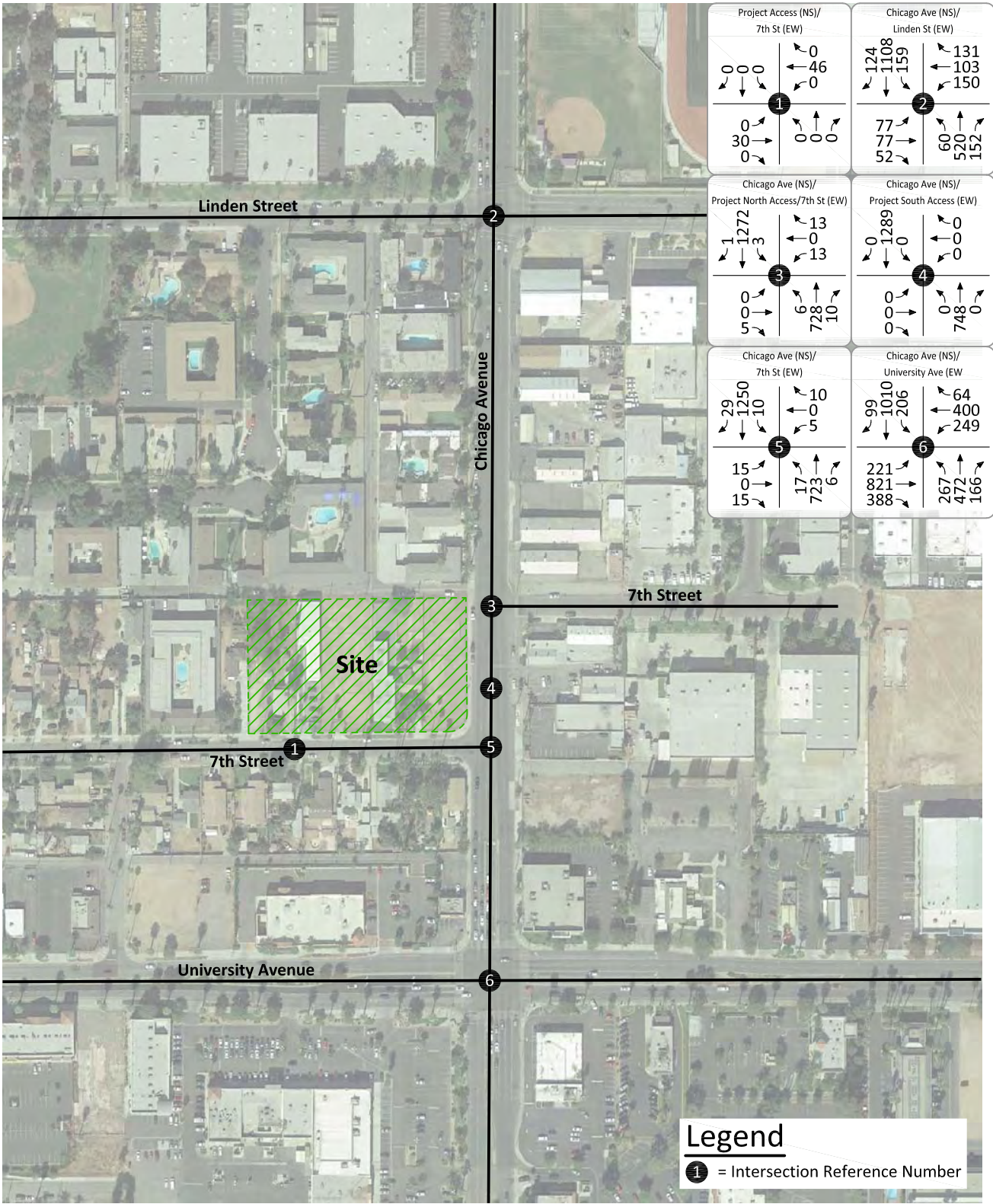


Figure 38
Buildout Year (2025) With Project
Morning Peak Hour Intersection Turning Movement Volumes

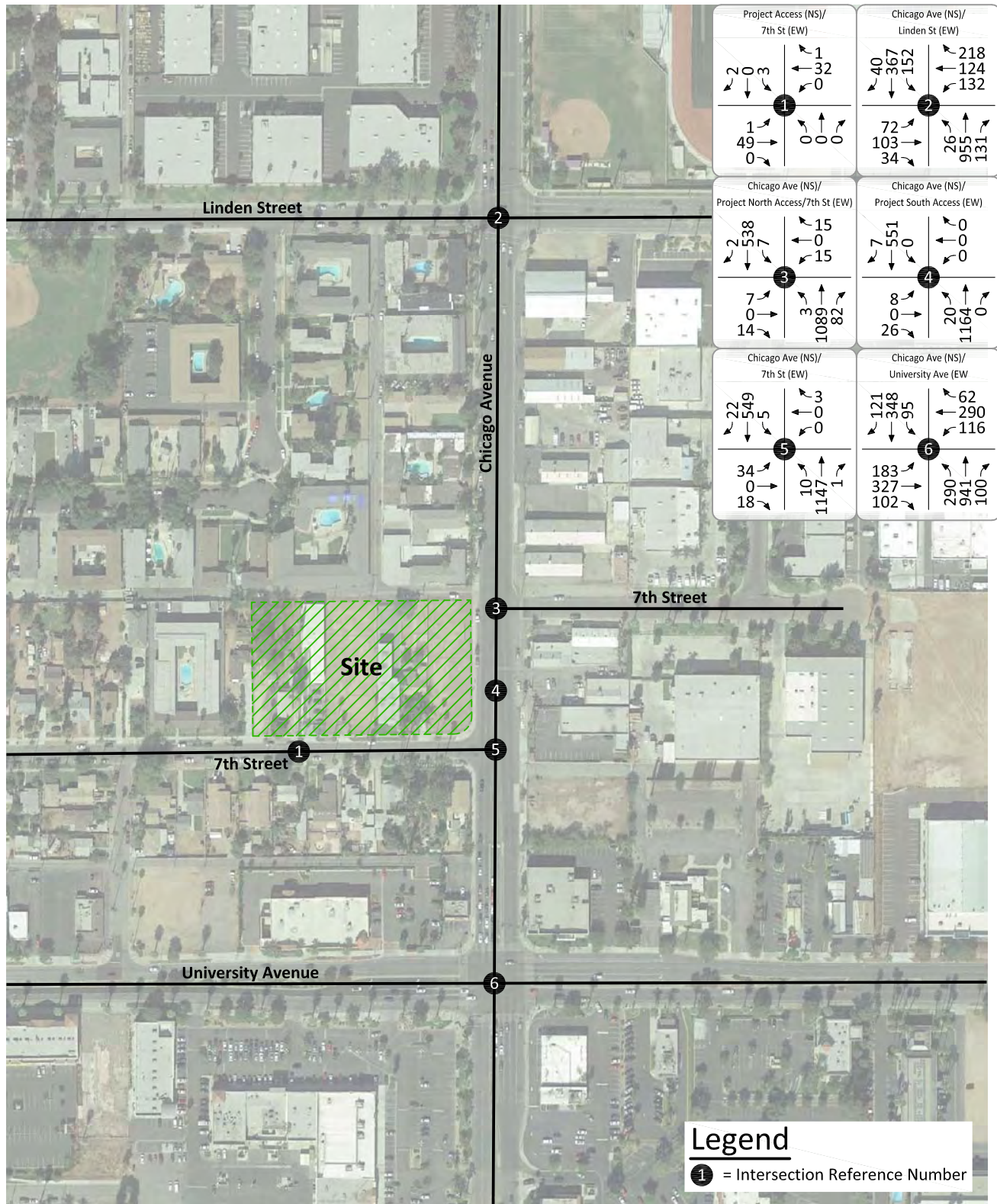
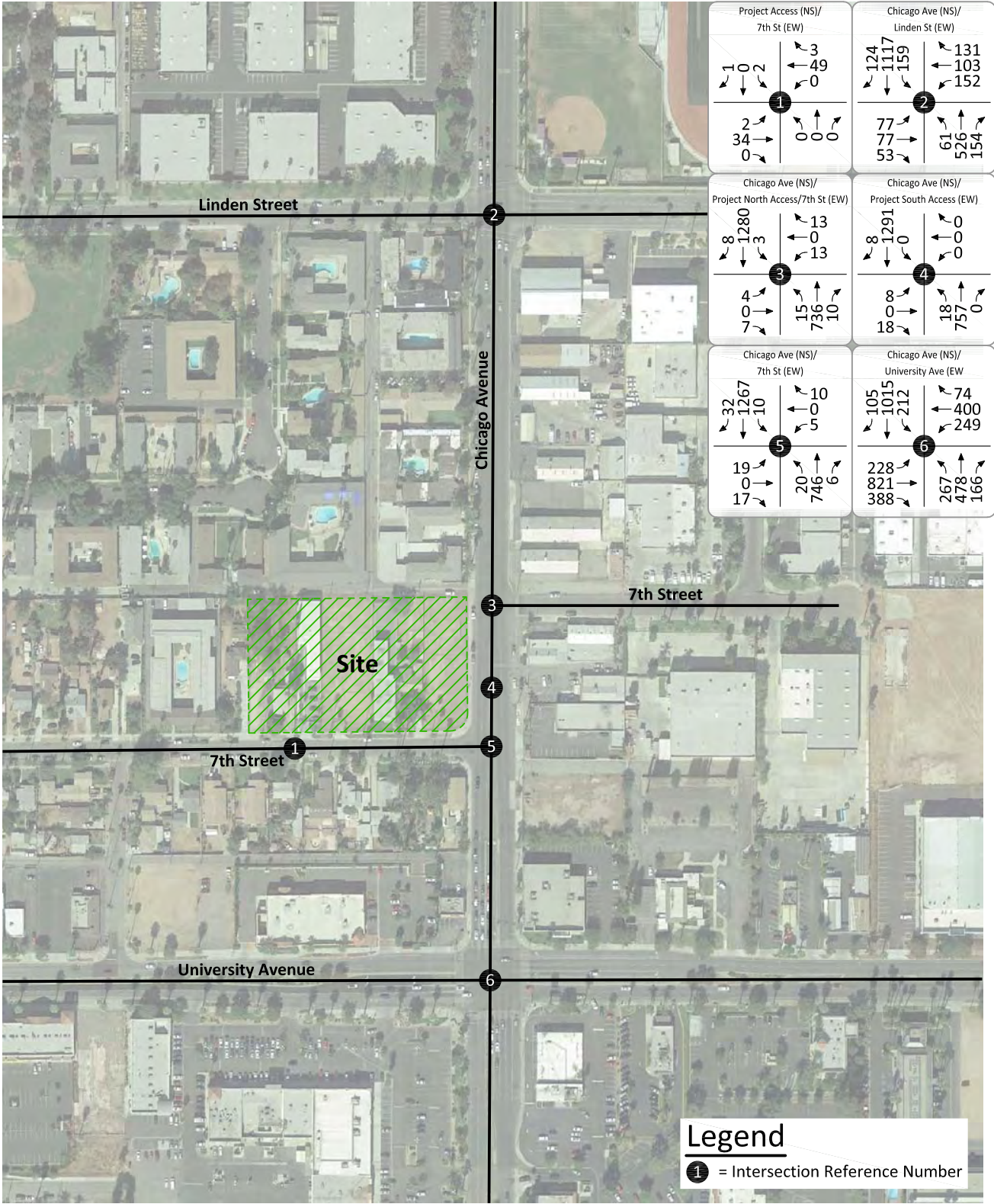


Figure 39
Buildout Year (2025) With Project
Evening Peak Hour Intersection Turning Movement Volumes



IX. RECOMMENDATIONS

A. Site Access

The project site is proposed to provide access to Chicago Avenue and 7th Street.

B. Project Specific Roadway Improvements

1. On- Site

Site-specific circulation and access recommendations are depicted on Figure 40.

Chicago Avenue from the north project boundary to 7th Street is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

7th Street from the west project boundary to Chicago Avenue is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

Sufficient on-site parking should be provided to meet City of Riverside parking code requirements.

Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Riverside sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to issue of grading permits.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

2. Off-Site

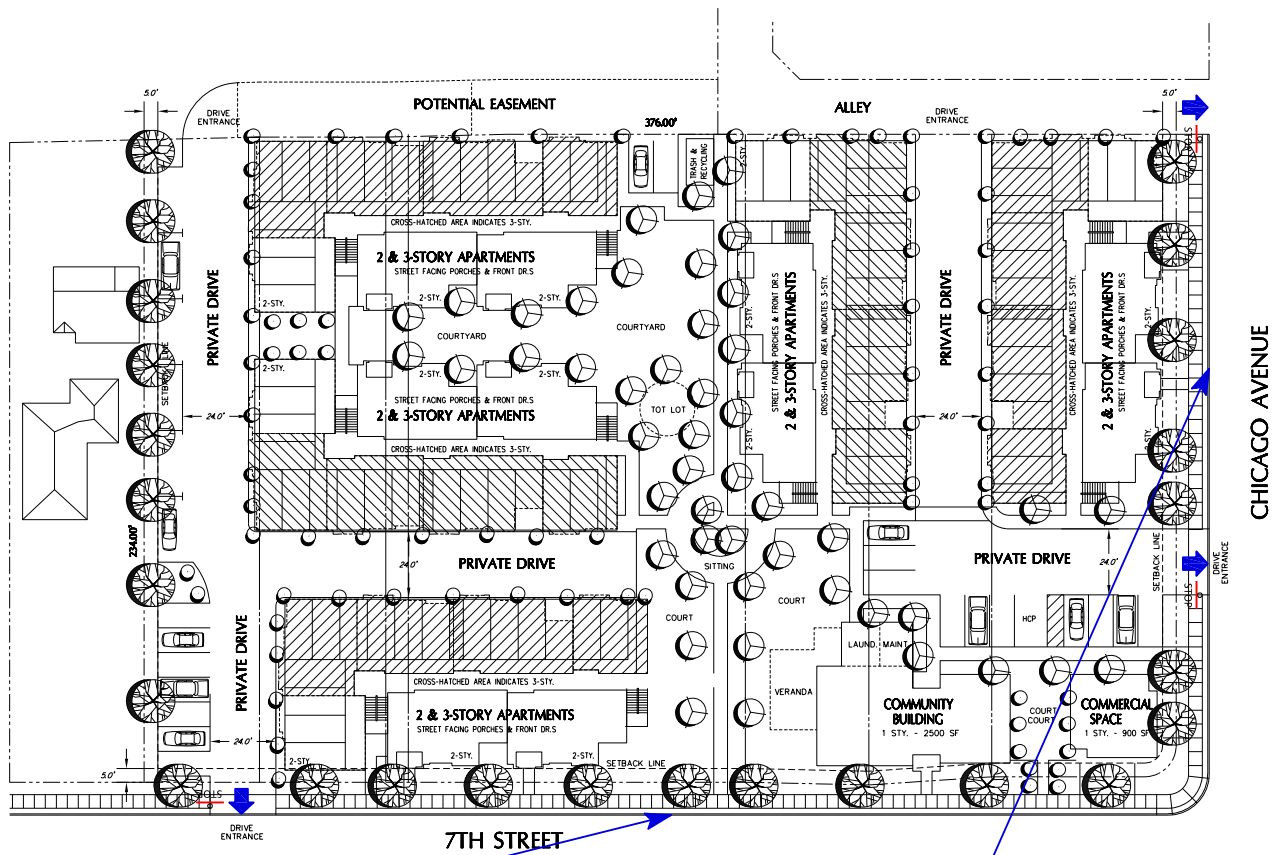
As is the case for any roadway design, the City of Riverside should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

C. Significantly Impacted Intersection Mitigation Measures

The following measure is recommended to mitigate the impact of the project on significantly impacted study area intersections:

The recommended mitigation measure for the significantly impacted study area intersections is an extension of the north-south two-way left turn median on Chicago Avenue from its occurrence south of the project, to the project's north boundary. Figure 41 exhibits a conceptual striping plan for these improvements. The existing on-street parking would need remain.

Figure 40
Circulation Recommendations



7th Street from the west project boundary to Chicago Avenue is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

Chicago Avenue from the north project boundary to 7th Street is currently improved to its ultimate half-section width. The project proponent will be responsible for improvements to meet City standards, including landscaping and parkway improvements in conjunction with development, as necessary to the satisfaction of the Department of Public Works.

Sufficient on-site parking should be provided to meet City of Riverside parking code requirements.

Sight distance at the project accesses shall comply with standard California Department of Transportation and City of Riverside sight distance standards. The final grading, landscaping, and street improvement plans shall demonstrate that sight distance standards are met. Such plans must be reviewed by the City and approved as consistent with this measure prior to issue of grading permits.

On-site traffic signing and striping should be implemented in conjunction with detailed construction plans for the project.

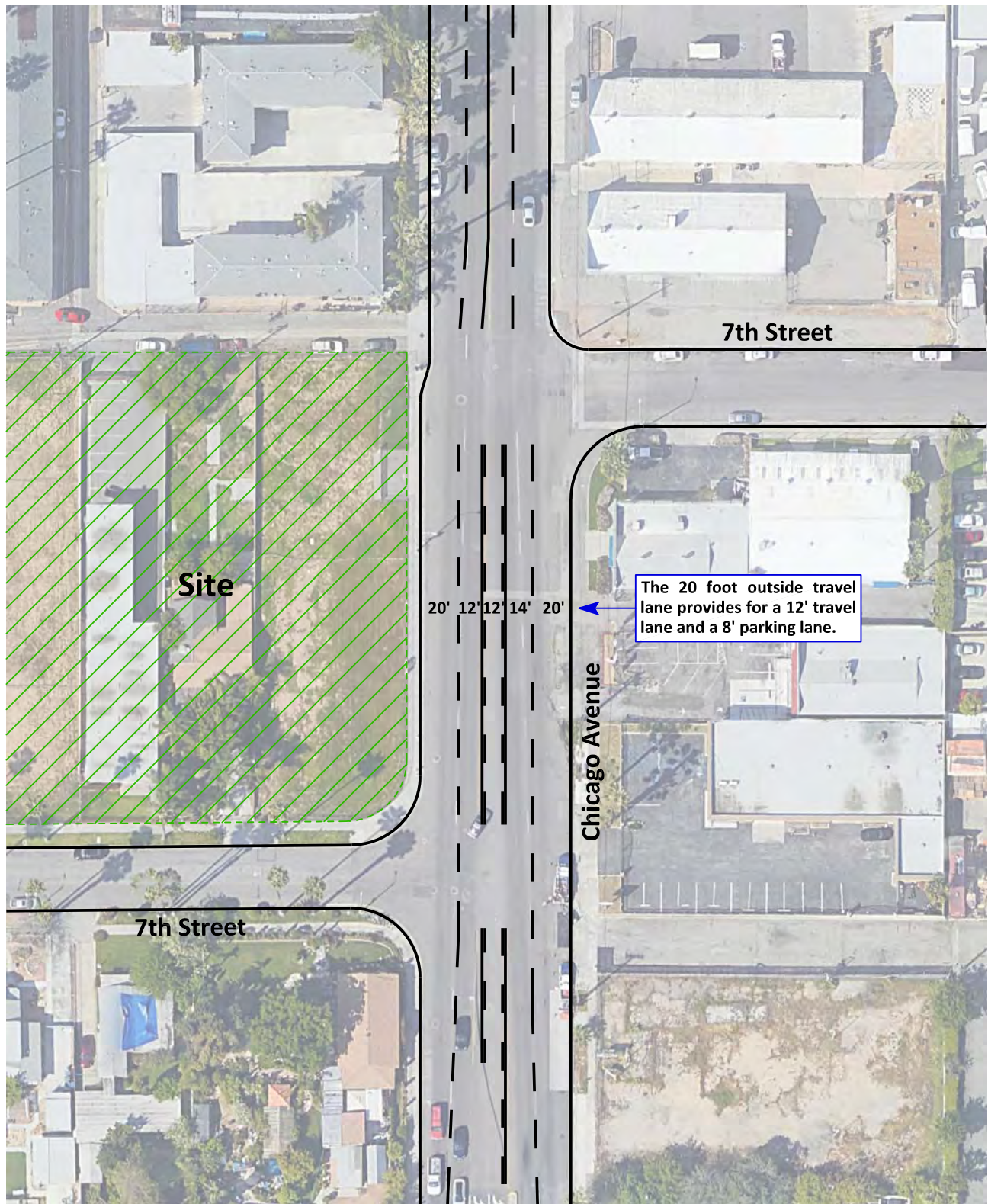
As is the case for any roadway design, the City of Riverside should periodically review traffic operations in the vicinity of the project once the project is constructed to assure that the traffic operations are satisfactory.

Legend

- = Stop Sign
- = Full Access Driveway



Figure 41
Chicago Avenue Conceptual Striping Plan



APPENDICES

Appendix A – Glossary of Transportation Terms

Appendix B – City of Riverside Scoping Agreement

Appendix C – Intersection Turning Movement Count Worksheets

Appendix D – Explanation and Calculation of Intersection Delay

APPENDIX A

Glossary of Transportation Terms

GLOSSARY OF TRANSPORTATION TERMS

COMMON ABBREVIATIONS

AC:	Acres
ADT:	Average Daily Traffic
Caltrans:	California Department of Transportation
DU:	Dwelling Unit
ICU:	Intersection Capacity Utilization
LOS:	Level of Service
TSF:	Thousand Square Feet
V/C:	Volume/Capacity
VMT:	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The total volume during a year divided by the number of days in a year. Usually only weekdays are included.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A constriction along a travelway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CYCLE LENGTH: The time period in seconds required for one complete signal cycle.

CUL-DE-SAC STREET: A local street open at one end only, and with special provisions for turning around.

DAILY CAPACITY: The daily volume of traffic that will result in a volume during the peak hour equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

ORIGIN-DESTINATION SURVEY: A survey to determine the point of origin and the point of destination for a given vehicle trip.

PASSENGER CAR EQUIVALENTS (PCE): One car is one Passenger Car Equivalent. A truck is equal to 2 or 3 Passenger Car Equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher Passenger Car Equivalent than empty trucks.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through a signalized intersection.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

City of Riverside Scoping Agreement



Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Riverside Public Works Traffic Engineering Division requirements for traffic impact analysis of the following project. The analysis must follow the City Traffic Impact Analysis Preparation Guide dated January 2016.

Case No. _____
Related Cases - _____
SP No. _____
EIR No. _____
GPA No. _____
CZ No. _____
Project Name: Entrada Housing Development
Project Location: Northwest corner of Chicago Avenue and 7th Street, in the City of Riverside
Project Description: 65 Dwelling Unit Multifamily Housing (Low-Rise) Apartments and 900 square feet of convenience market

	<u>Consultant</u>	<u>Developer</u>
Name:	<u>Bryan Crawford, Kunzman Associates, Inc.</u>	<u>Nicole Sauviat Criste, Terra Nova Planning & Research, Inc.</u>
Address:	<u>111 Town and Country Road, Suite 34</u> <u>Orange, CA 92868</u>	<u>42635 Melanie Place, Suite 101</u> <u>Palm Desert, CA 92211</u>
Telephone:	<u>714-376-0224 x 213 bryan@traffic-engineer.com</u>	<u>760-341-4800 x 211 ncriste@terranovalanning.com</u>

A. Trip Generation Source: ITE Trip Generation Manual, most recent edition

Existing Land Use	<u>MDR</u>	Proposed Land Use	<u>No Change</u>
Existing Zoning	<u>R-1-7000</u>	Proposed Zoning	<u>No Change</u>
Total Daily Trips	<u>990</u>		

	In	Out	Total
AM Trips	<u>28</u>	<u>44</u>	<u>72</u>
PM Trips	<u>40</u>	<u>29</u>	<u>68</u>

Internal Trip ☐ Yes ☒ No (_____ % Trip Discount)
Allowance
Pass-By Trip Allowance ☒ Yes ☐ No (25% - Convenience Market % Trip Discount)
(Attach additional sheet if this is a multi-use site with a breakdown of trips generated)

B. Trip Geographic Distribution: N 35 % S 55 % E 0 % W 10 %
(See attached exhibit for detailed assignment)

C. Background Traffic

Project Completion Year: 2020 Annual Ambient Growth Rate: 2.0 %
Other area projects to be included: Cumulative List obtained from City

Please contact Planning Division or use the most recently provided data

Model/Forecast methodology if required _____

D. Build-out Studies: Does this project require a Build-out Study per TIA Guidelines Section 7.2?

☐ Yes ☒ No

E. Study intersections: (NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)

1. Project Access (NS) at 7th Street (EW)

2. Chicago Avenue (NS) at Linden Street (EW)

3. Chicago Avenue (NS) at Project North Access/7th Street (EW)

4. Chicago Avenue (NS) at Project South Access (EW)

5. Chicago Avenue (NS) at 7th Street (EW)

6. Chicago Avenue (NS) at University Avenue (EW)

7. _____

8. _____

F. Study Roadway Segments (For Build-out Studies):

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

G. Other Jurisdictional Impacts

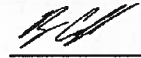
Is this project within any other Agency's Sphere of Influence or one-mile radius of boundaries? ☐ Yes ☒ No

If so, name of Jurisdiction: _____

H. Site Plan (please attach a legible 11'X17' copy)

I. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Public Works Traffic Department)

Recommended by:



Consultant's Representative

3/27/2018

Date

Scoping Agreement Submitted on

3/27/2018

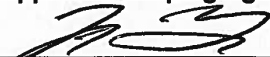
Date

Scoping Agreement Resubmitted on

4/25/2018

Date

Approved Scoping Agreement:



City of Riverside
Traffic Engineering Division

4/30/18

Date

cc: Planning Division

Table 1
Project Trip Generation¹

Land Use	Quantity	Units ²	Peak Hour						Daily
			Morning			Evening			
			Inbound	Outbound	Total	Inbound	Outbound	Total	
<u>Trip Generation Rates</u>									
Multifamily Housing (Low-Rise)	1.00	DU	0.11	0.35	0.46	0.35	0.21	0.56	7.32
Convenience Market	1.00	TSF	31.27	31.27	62.54	25.05	24.06	49.11	762.28
<u>Trips Generated</u>									
Multifamily Housing (Low-Rise)	65	DU	7	23	30	23	13	36	476
Convenience Market	0.900	TSF	28	28	56	23	22	44	686
Gross Trips Generated			35	51	86	46	35	80	1,162
<u>Pass-By Trips Reduction</u>									
Convenience Market (25%) ³			-7	-7	-14	-6	-6	-12	-172
New Trip Generated			28	44	72	40	29	68	990

¹ Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017, Land Use Codes 220 and 851.

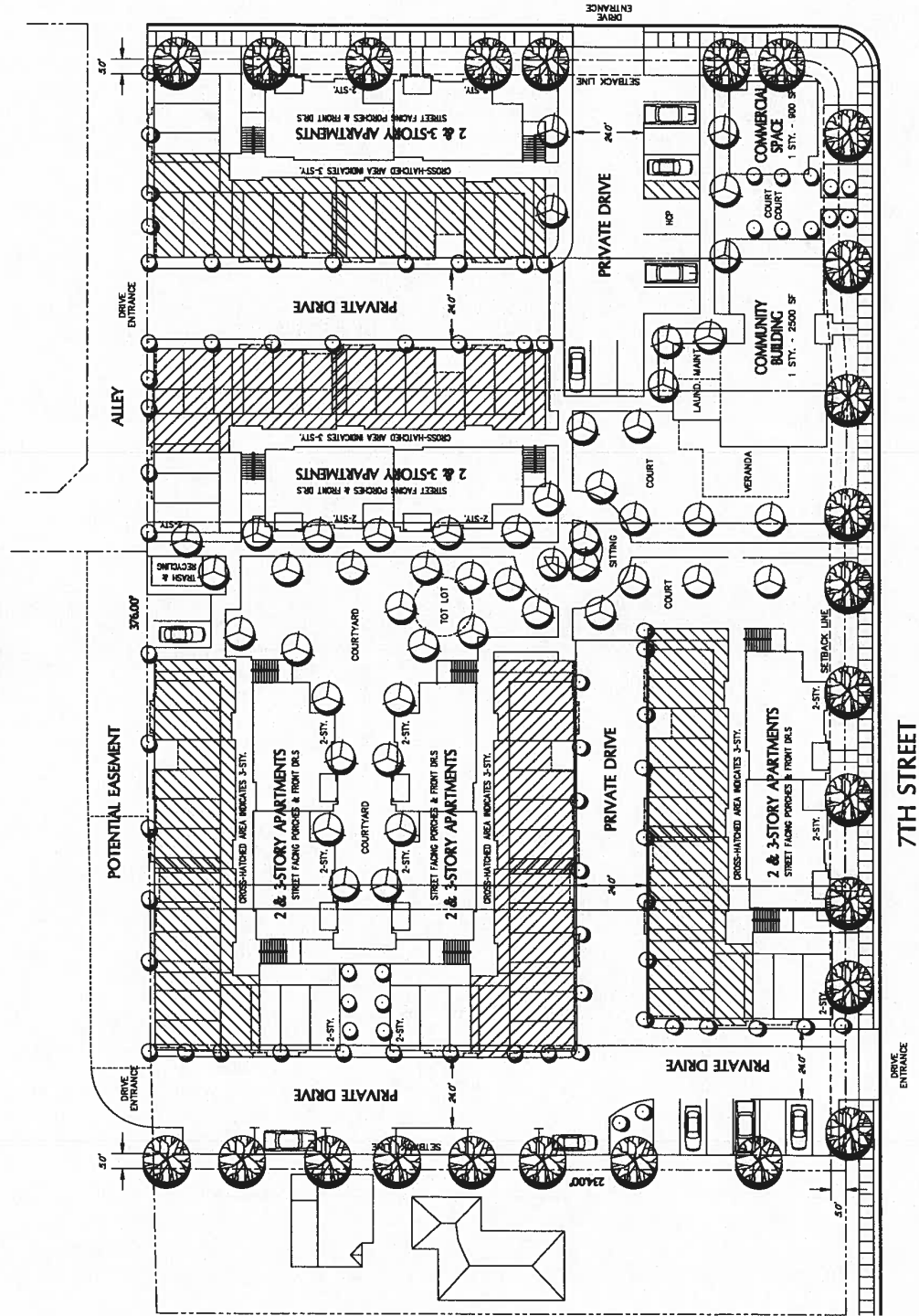
² DU = Dwelling Units, TSF = Thousand Square Feet

³ Pass-by rate percentage from the City of Riverside Public Works Department Traffic Impact Analysis Preparation Guide, January 2016.

Figure 1
Project Location Map



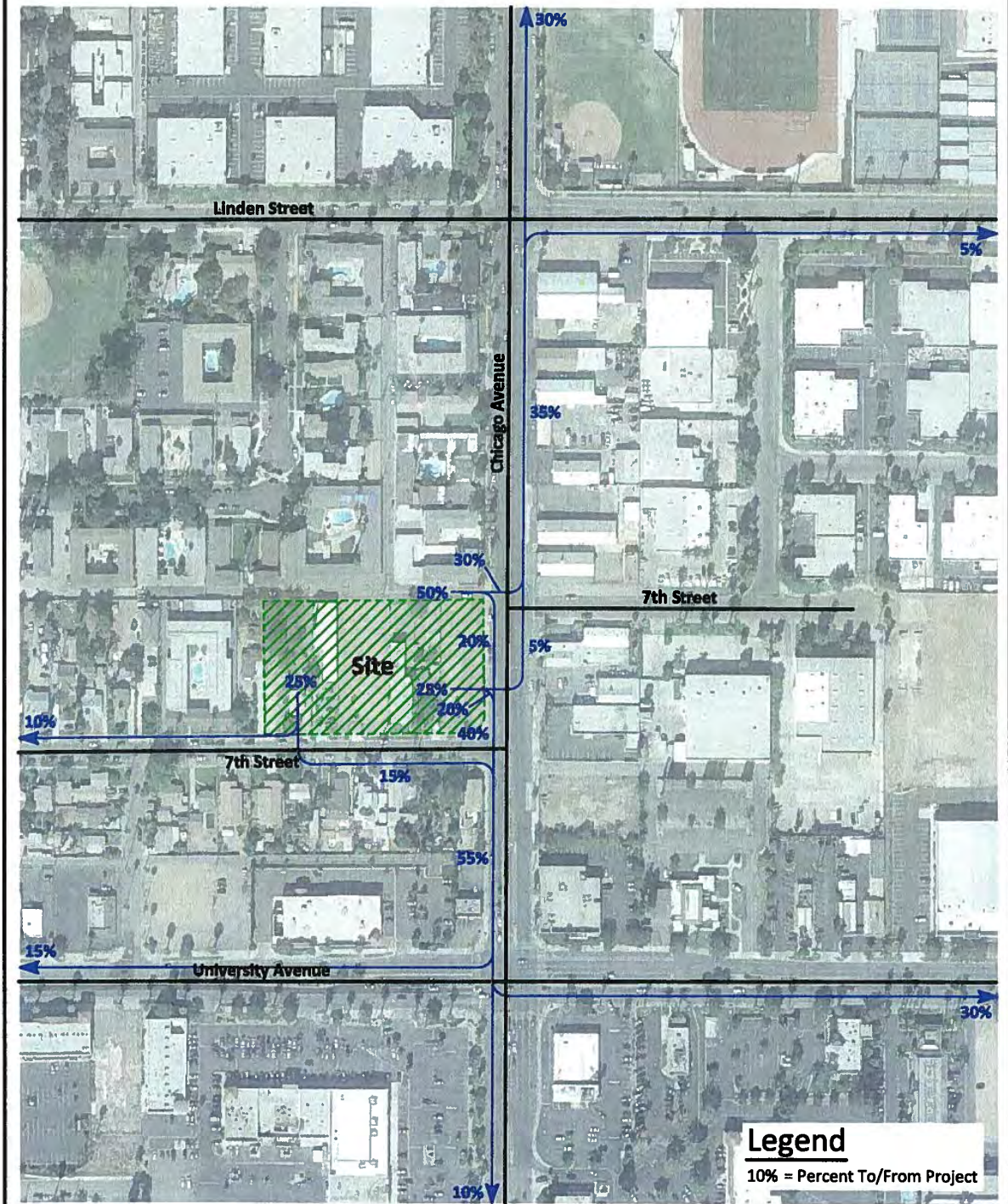
Figure 2
Site Plan



JN 7376

KUNZMAN ASSOCIATES, INC.
OVER 40 YEARS OF EXCELLENT SERVICE

Figure 3
Project Trip Distribution - Residential



KUNZMAN ASSOCIATES, INC.
OVER 40 YEARS OF EXCELLENT SERVICE



JN 7376

Figure 4
Project Trip Distribution - Convenience Market

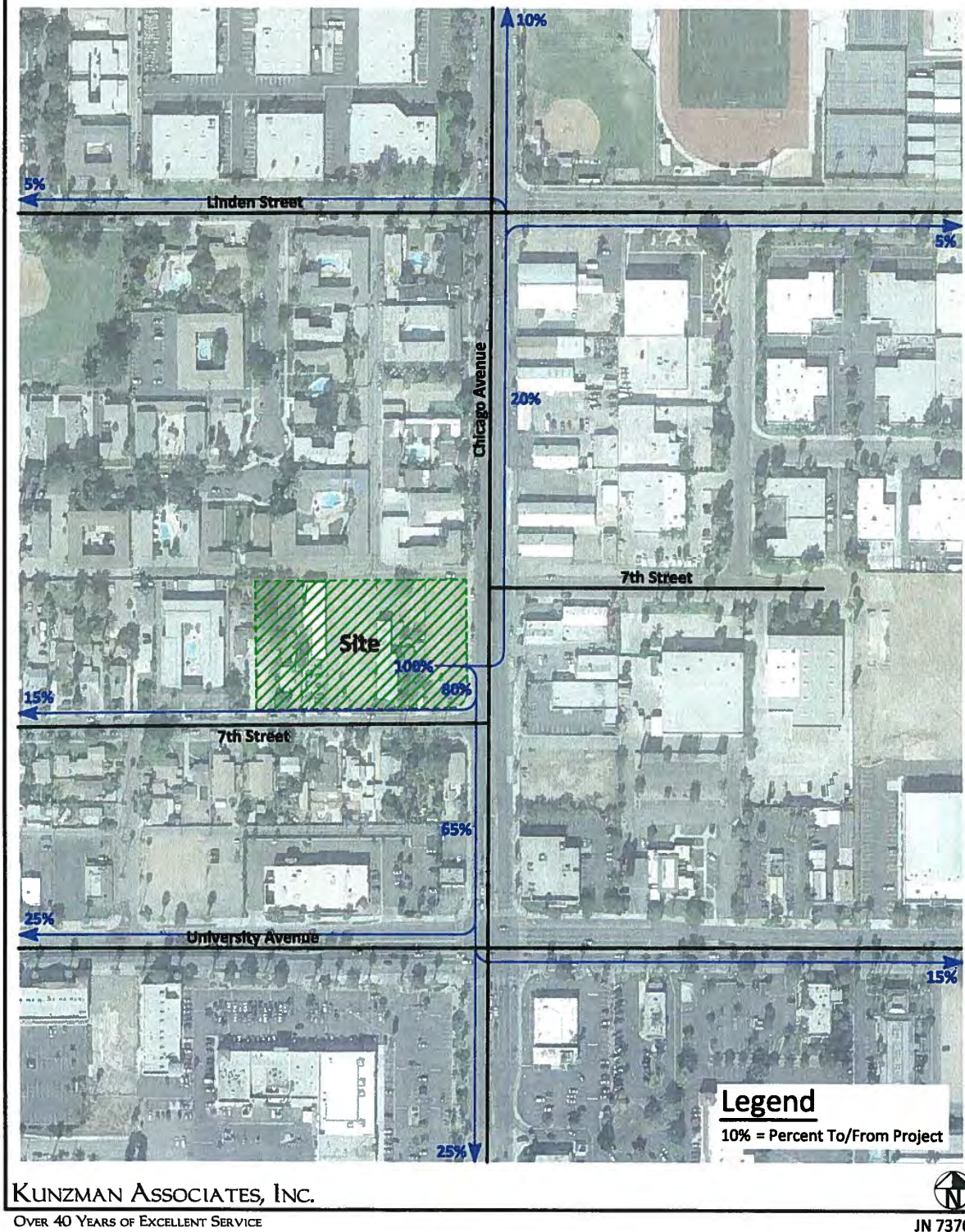


Figure 5
Pass-By Trip Distribution



KUNZMAN ASSOCIATES, INC.
OVER 40 YEARS OF EXCELLENT SERVICE



JN 7376

APPENDIX C

Intersection Turning Movement Count Worksheets

INTERSECTION TURNING MOVEMENT COUNTS

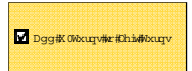
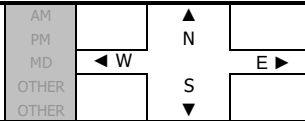
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE:
Wed, Apr 18, 18

LOCATION: Riverside
NORTH & SOUTH: Chicago
EAST & WEST: Linden

PROJECT #: SC1691
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

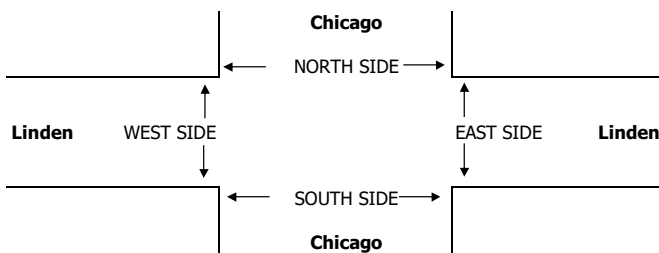


	NORTHBOUND Chicago			SOUTHBOUND Chicago			EASTBOUND Linden			WESTBOUND Linden			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1	ET 1	ER 0	WL 1	WT 2	WR 0	TOTAL

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

AM	7:00 AM	4	142	18	21	45	5	15	8	2	21	20	31	332
	7:15 AM	2	157	33	22	50	11	15	13	9	22	9	27	370
	7:30 AM	6	177	34	33	54	7	11	40	8	31	22	42	465
	7:45 AM	6	201	44	56	83	6	13	35	6	53	44	79	626
	8:00 AM	6	226	24	24	77	9	16	12	6	25	38	55	518
	8:15 AM	4	217	10	16	102	13	23	1	9	5	3	10	413
	8:30 AM	5	165	22	17	91	5	25	4	9	6	4	17	370
	8:45 AM	5	136	12	15	90	8	14	3	9	1	2	12	307
	VOLUMES	38	1,421	197	204	592	64	132	116	58	164	142	273	3,401
	APPROACH %	2%	86%	12%	24%	69%	7%	43%	38%	19%	28%	25%	47%	
APP/DEPART	1,656	/	1,827	860	/	813	306	/	517	579	/	244	0	
BEGIN PEAK HR	7:30 AM													
VOLUMES	22	821	112	129	316	35	63	88	29	114	107	186	2,022	
APPROACH %	2%	86%	12%	27%	66%	7%	35%	49%	16%	28%	26%	46%		
PEAK HR FACTOR	0.933			0.828			0.763			0.578			0.808	
APP/DEPART	955	/	1,070	480	/	459	180	/	329	407	/	164	0	
PM	4:00 PM	14	143	21	24	194	16	18	12	7	23	22	29	523
	4:15 PM	13	128	25	33	212	25	16	11	7	38	28	16	552
	4:30 PM	8	137	17	31	214	17	5	14	11	16	20	28	518
	4:45 PM	9	112	37	38	247	24	16	13	13	35	21	26	591
	5:00 PM	18	108	36	28	254	26	14	19	8	36	25	38	610
	5:15 PM	11	123	31	33	266	28	12	14	12	30	22	16	598
	5:30 PM	14	107	28	35	195	30	25	19	12	29	20	30	544
	5:45 PM	12	107	21	30	200	20	10	14	4	24	20	16	478
	VOLUMES	99	965	216	252	1,782	186	116	116	74	231	178	199	4,414
	APPROACH %	8%	75%	17%	11%	80%	8%	38%	38%	24%	38%	29%	33%	
	APP/DEPART	1,280	/	1,280	2,220	/	2,087	306	/	584	608	/	463	0
	BEGIN PEAK HR	4:45 PM												
	VOLUMES	52	450	132	134	962	108	67	65	45	130	88	110	2,343
APPROACH %	8%	71%	21%	11%	80%	9%	38%	37%	25%	40%	27%	34%		
PEAK HR FACTOR	0.961			0.920			0.790			0.828			0.960	
APP/DEPART	634	/	627	1,204	/	1,137	177	/	331	328	/	248	0	

0	0	0	1	1
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0	0	0	0	0
0	0	0	0	0
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0	1	0	1	2

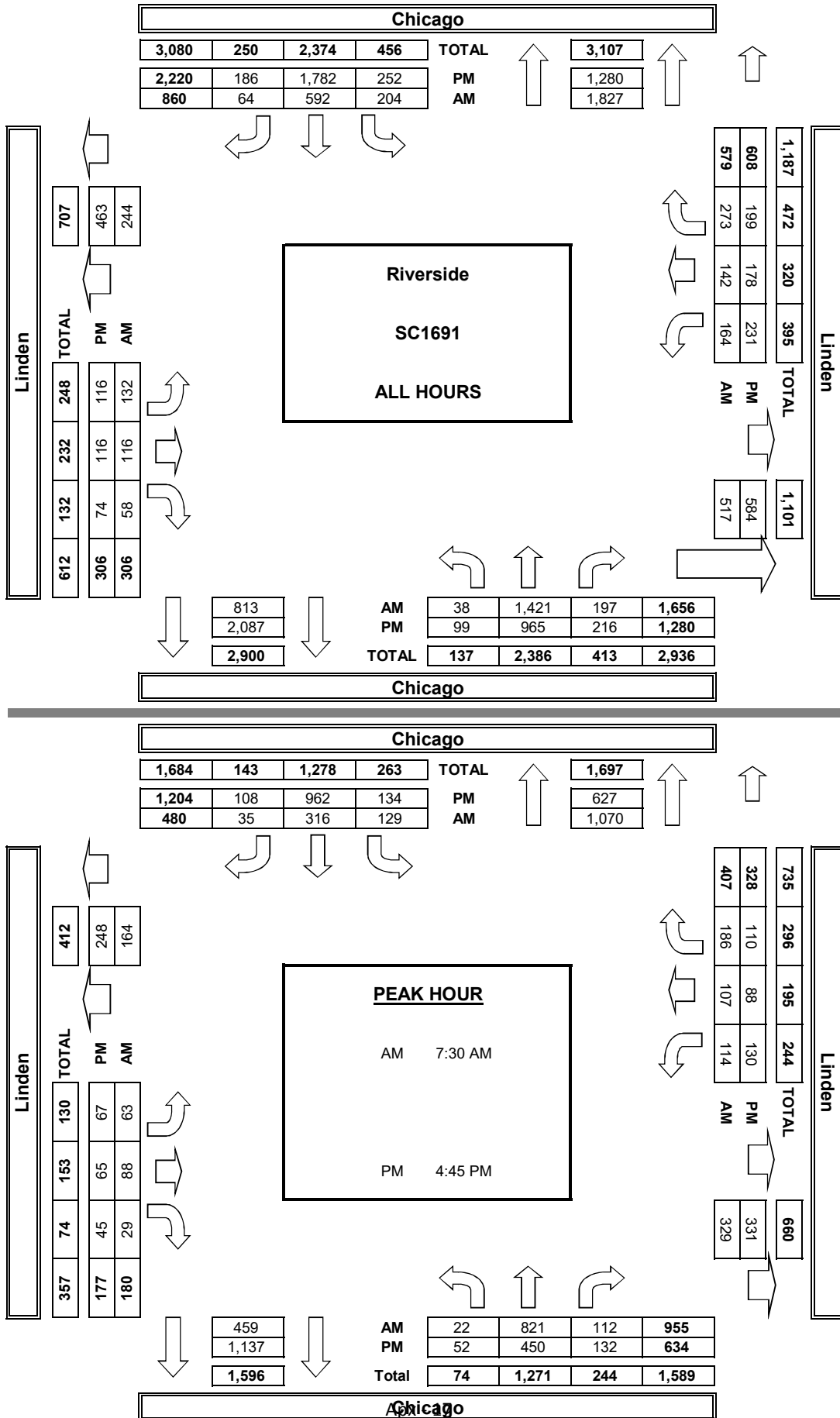
[illegible]

AM		7:00 AM
		7:15 AM
		7:30 AM
		7:45 AM
		8:00 AM
		8:15 AM
		8:30 AM
		8:45 AM
	TOTAL	
		AM BEGIN PEAK HR
PM		4:00 PM
		4:15 PM
		4:30 PM
		4:45 PM
		5:00 PM
		5:15 PM
		5:30 PM
		5:45 PM
	TOTAL	
		PM BEGIN PEAK HR

PEDESTRIAN + BIKE CROSSINGS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
7:30 AM				
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
4:45 PM				

[illegible][illegible]

AimTD LLC
TURNING MOVEMENT COUNTS



INTERSECTION TURNING MOVEMENT COUNTS

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

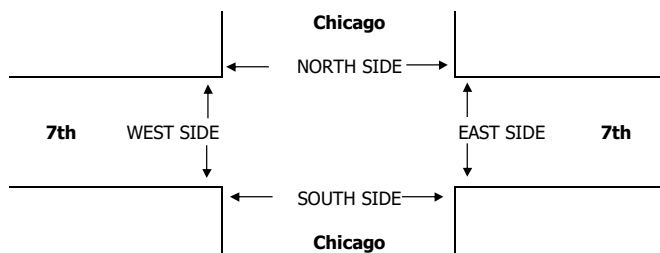
DATE: Wed, Apr 18, 18	LOCATION: NORTH & SOUTH: EAST & WEST:	Riverside Chicago 7th	PROJECT #: LOCATION #: CONTROL:	SC1691 2 STOP E/W
NOTES: PM SB queue			AM PM MD OTHER OTHER	▲ ▼ N S ◀ W E ▶

☒ Dgg#k Gbcurv#k#Chiz#bcurv

		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
		Chicago			Chicago			7th			7th			
LANES:		NL 0	NT 2	NR 0	SL 0	ST 2	SR 0	EL 0	ET 1	ER 0	WL 0	WT 1	WR 0	TOTAL
AM	7:00 AM	0	158	20	4	63	0	0	0	0	1	0	2	248
	7:15 AM	0	208	12	8	73	0	0	0	1	2	0	2	306
	7:30 AM	0	226	15	1	98	0	0	0	1	6	0	4	351
	7:45 AM	0	235	33	3	136	0	0	0	1	4	0	1	413
	8:00 AM	0	249	12	0	114	0	0	0	4	2	0	5	386
	8:15 AM	0	228	11	2	114	0	0	0	2	1	0	3	361
	8:30 AM	2	183	13	1	100	0	0	0	1	7	0	4	311
	8:45 AM	0	149	4	6	108	0	0	0	0	7	0	4	278
	VOLUMES	2	1,636	120	25	806	0	0	0	10	30	0	25	2,654
	APPROACH %	0%	93%	7%	3%	97%	0%	0%	0%	100%	55%	0%	45%	
APP/DEPART	1,758	/	1,661	831	/	847	10	/	145	55	/	1	0	
BEGIN PEAK HR	7:30 AM													
VOLUMES	0	938	71	6	462	0	0	0	8	13	0	13	1,511	
APPROACH %	0%	93%	7%	1%	99%	0%	0%	0%	100%	50%	0%	50%		
PEAK HR FACTOR	0.941			0.842			0.500			0.650			0.915	
APP/DEPART	1,009	/	951	468	/	483	8	/	77	26	/	0	0	
PM	4:00 PM	0	186	7	0	221	0	0	0	1	12	0	8	435
	4:15 PM	0	167	5	3	248	1	0	0	1	6	0	7	438
	4:30 PM	3	152	3	1	255	0	0	0	0	6	0	5	425
	4:45 PM	1	164	4	1	283	0	0	0	1	2	0	3	459
	5:00 PM	0	162	1	0	281	0	0	0	1	2	0	2	449
	5:15 PM	1	153	1	1	285	1	0	0	2	1	0	1	446
	5:30 PM	1	144	1	3	262	0	0	0	1	1	0	3	416
	5:45 PM	3	139	2	1	224	0	0	0	1	1	0	2	373
	VOLUMES	9	1,267	24	10	2,059	2	0	0	8	31	0	31	3,441
	APPROACH %	1%	97%	2%	0%	99%	0%	0%	0%	100%	50%	0%	50%	
APP/DEPART	1,300	/	1,301	2,071	/	2,098	8	/	31	62	/	11	0	
BEGIN PEAK HR	4:30 PM													
VOLUMES	5	631	9	3	1,104	1	0	0	4	11	0	11	1,779	
APPROACH %	1%	98%	1%	0%	100%	0%	0%	0%	100%	50%	0%	50%		
PEAK HR FACTOR	0.954			0.965			0.500			0.500			0.969	
APP/DEPART	645	/	643	1,108	/	1,119	4	/	11	22	/	6	0	

U-TURNS				
NB	SB	EB	WB	TTL
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0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
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1	0	0	0	1
0	0	0	0	0
1	0	0	0	1

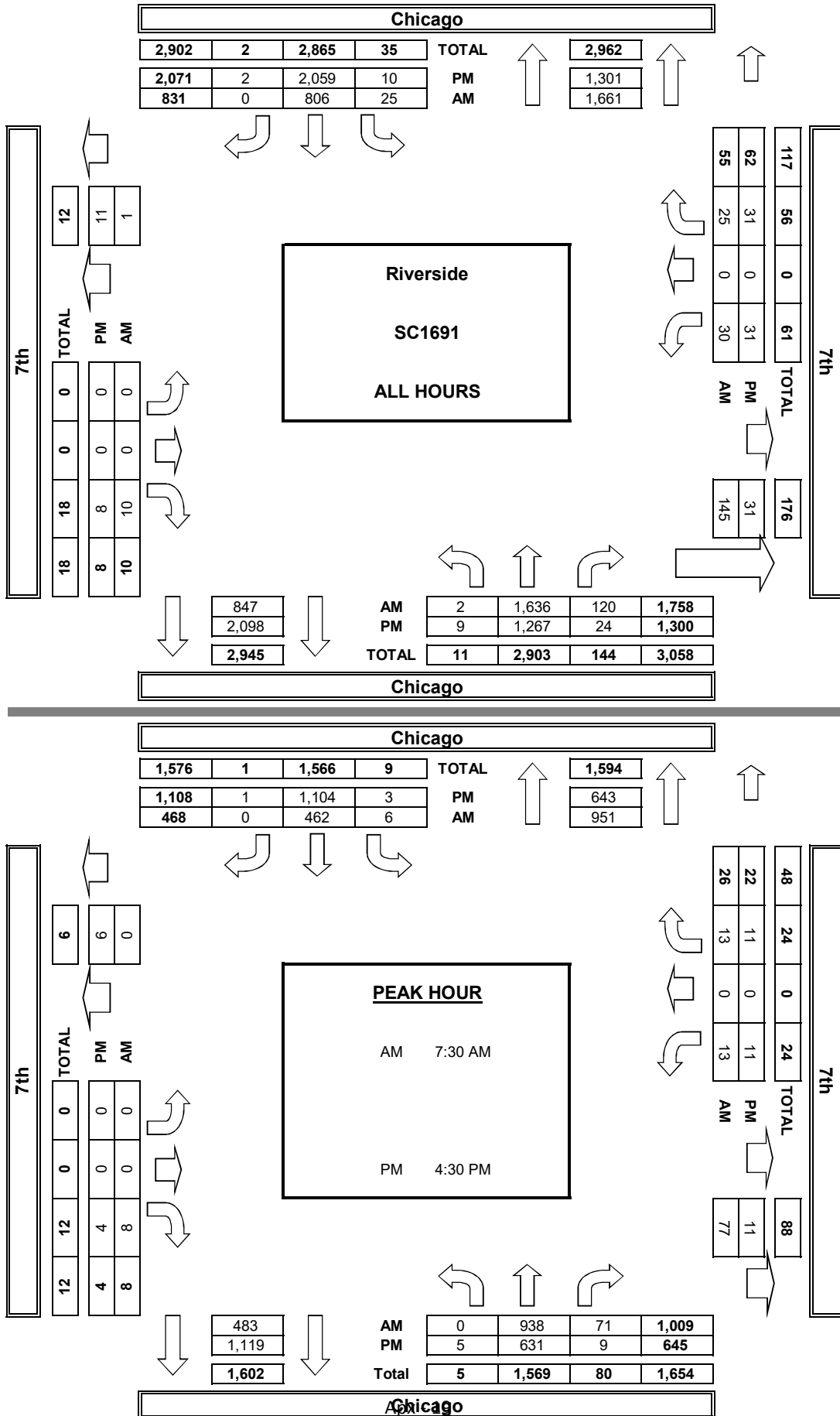
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0	1	0	0	1
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	3	0	0	3



AM		7:00 AM
		7:15 AM
		7:30 AM
		7:45 AM
		8:00 AM
		8:15 AM
		8:30 AM
		8:45 AM
	TOTAL	
		AM BEGIN PEAK HR
PM		4:00 PM
		4:15 PM
		4:30 PM
		4:45 PM
		5:00 PM
		5:15 PM
		5:30 PM
		5:45 PM
	TOTAL	
		PM BEGIN PEAK HR

[illegible][illegible][illegible]

AimTD LLC
TURNING MOVEMENT COUNTS

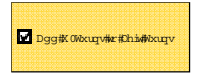


INTERSECTION TURNING MOVEMENT COUNTS

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

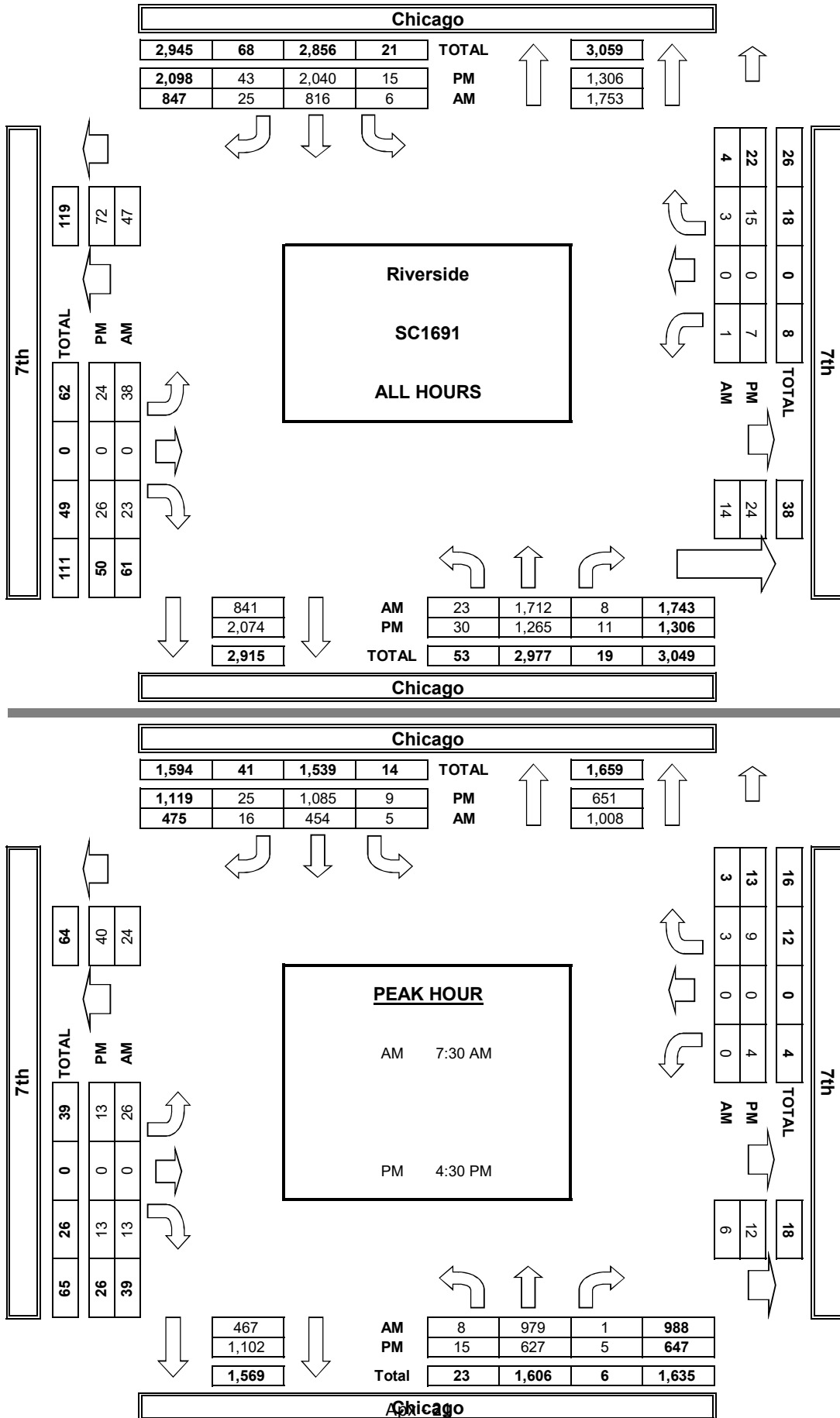
T218

DATE: Wed, Apr 18, 18	LOCATION: NORTH & SOUTH: EAST & WEST:	Riverside Chicago 7th	PROJECT #: LOCATION #: CONTROL:	SC1691 3 STOP E/W
NOTES: PM SB queue			AM PM MD OTHER OTHER ▲ N ◀ W S ▶ E ▼	



	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Chicago			Chicago			7th			7th			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	0	0	2	0	0	1	0	0	1	0	
7:00 AM	2	189	0	0	68	3	5	0	6	0	0	0	273
7:15 AM	4	196	0	0	78	3	2	0	1	0	0	0	284
7:30 AM	1	236	0	0	101	5	9	0	2	0	0	0	354
7:45 AM	5	251	0	0	119	4	8	0	3	0	0	0	390
8:00 AM	0	247	1	3	115	5	4	0	2	0	0	1	378
8:15 AM	2	245	0	2	119	2	5	0	6	0	0	2	383
8:30 AM	2	195	3	1	118	1	2	0	3	1	0	0	326
8:45 AM	7	153	4	0	98	2	3	0	0	0	0	0	267
VOLUMES	23	1,712	8	6	816	25	38	0	23	1	0	3	2,655
APPROACH %	1%	98%	0%	1%	96%	3%	62%	0%	38%	25%	0%	75%	
APP/DEPART	1,743	/	1,753	847	/	841	61	/	14	4	/	47	0
BEGIN PEAK HR	7:30 AM												
VOLUMES	8	979	1	5	454	16	26	0	13	0	0	3	1,505
APPROACH %	1%	99%	0%	1%	96%	3%	67%	0%	33%	0%	0%	100%	
PEAK HR FACTOR	0.965			0.965			0.886			0.375			0.965
APP/DEPART	988	/	1,008	475	/	467	39	/	6	3	/	24	0
4:00 PM	8	190	3	2	229	7	5	0	4	0	0	4	452
4:15 PM	2	169	2	3	254	6	2	0	3	1	0	2	444
4:30 PM	5	163	4	4	234	7	1	0	3	1	0	2	424
4:45 PM	2	163	1	3	277	8	5	0	4	1	0	3	467
5:00 PM	4	151	0	1	291	5	4	0	3	1	0	4	464
5:15 PM	4	150	0	1	283	5	3	0	3	1	0	0	450
5:30 PM	3	149	0	0	251	1	2	0	3	1	0	0	410
5:45 PM	2	130	1	1	221	4	2	0	3	1	0	0	365
VOLUMES	30	1,265	11	15	2,040	43	24	0	26	7	0	15	3,476
APPROACH %	2%	97%	1%	1%	97%	2%	48%	0%	52%	32%	0%	68%	
APP/DEPART	1,306	/	1,306	2,098	/	2,074	50	/	24	22	/	72	0
BEGIN PE													

AimTD LLC
TURNING MOVEMENT COUNTS

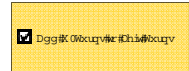


INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Wed, Apr 18, 18	LOCATION: NORTH & SOUTH: EAST & WEST:	Riverside Chicago University	PROJECT #: LOCATION #: CONTROL:	SC1691 4 SIGNAL
---------------------------------	--	---	--	--

NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▼	▶ E
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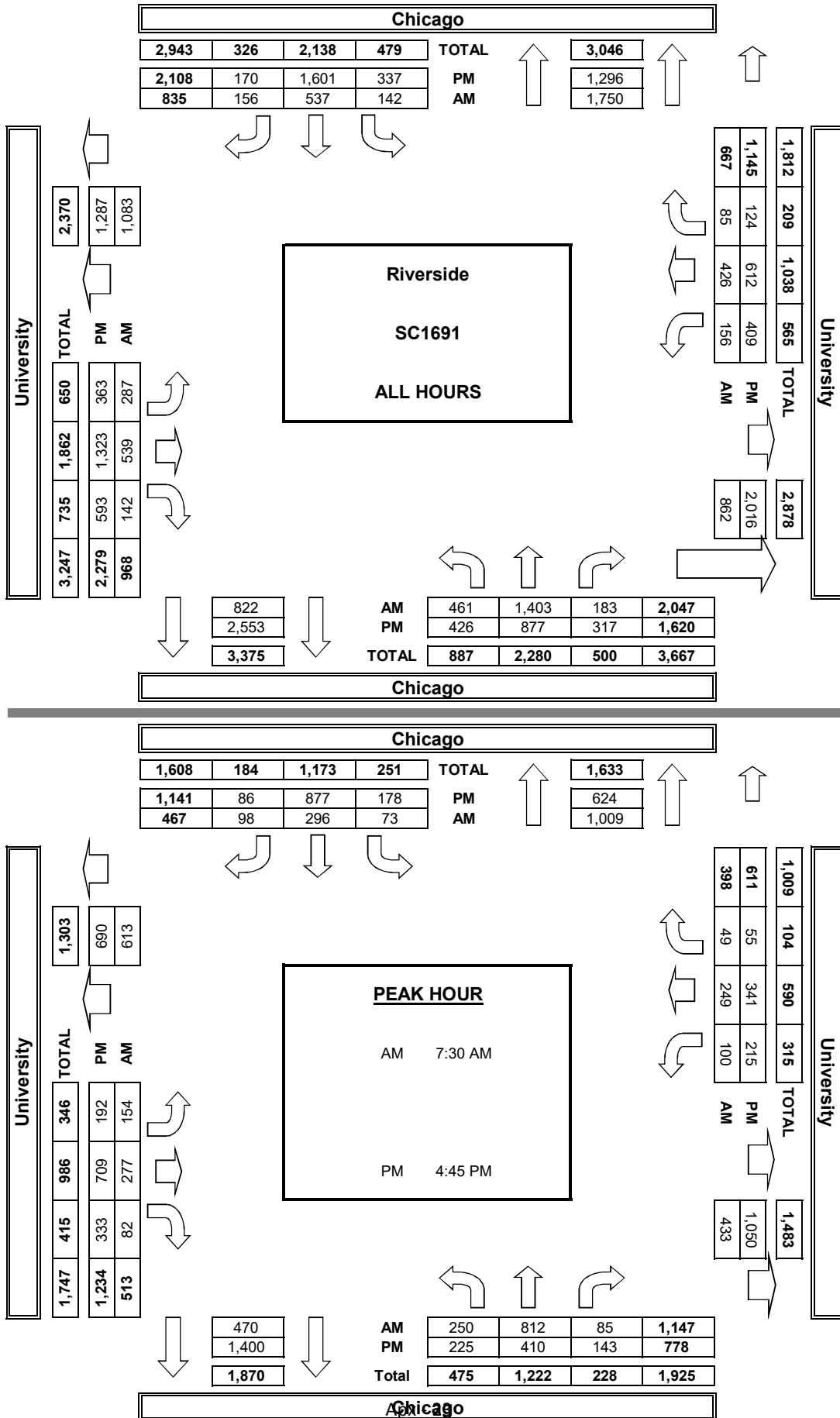


	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	Chicago			Chicago			University			University			
LANES:	NL 2	NT 2	NR 1	SL 2	ST 2	SR 0	EL 2	ET 2	ER 1	WL 2	WT 2	WR 1	TOTAL

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

AM	7:00 AM	55	153	14	7	47	13	27	45	13	9	48	9	440
	7:15 AM	65	159	22	15	56	8	37	76	7	11	32	4	492
	7:30 AM	50	204	22	9	61	26	39	86	16	15	58	15	601
	7:45 AM	80	214	26	19	80	33	49	72	17	26	64	12	692
	8:00 AM	72	203	20	23	73	21	34	70	21	34	85	11	667
	8:15 AM	48	191	17	22	82	18	32	49	28	25	42	11	565
	8:30 AM	49	149	27	31	64	17	39	62	19	15	41	12	525
	8:45 AM	42	130	35	16	74	20	30	79	21	21	56	11	535
	VOLUMES	461	1,403	183	142	537	156	287	539	142	156	426	85	4,517
	APPROACH %	23%	69%	9%	17%	64%	19%	30%	56%	15%	23%	64%	13%	
	APP/DEPART	2,047	/	1,750	835	/	822	968	/	862	667	/	1,083	0
PM	BEGIN PEAK HR	7:30 AM												
	VOLUMES	250	812	85	73	296	98	154	277	82	100	249	49	2,525
	APPROACH %	22%	71%	7%	16%	63%	21%	30%	54%	16%	25%	63%	12%	
	PEAK HR FACTOR	0.896												0.912
	APP/DEPART	1,147	/	1,009	467	/	470	513	/	433	398	/	613	0
	4:00 PM	61	155	43	42	181	23	40	141	53	45	54	19	857
	4:15 PM	34	109	46	44	207	26	43	136	72	51	69	13	850
	4:30 PM	48	123	55	43	176	16	45	156	63	44	74	20	863
	4:45 PM	52	116	33	36	210	29	52	176	94	67	85	10	960
	5:00 PM	61	110	42	51	218	18	47	160	85	55	81	9	937
	5:15 PM	51	93	34	50</									

AimTD LLC
TURNING MOVEMENT COUNTS



APPENDIX D

Explanation and Calculation of Intersection Delay

EXPLANATION AND CALCULATION OF INTERSECTION LEVEL OF SERVICE USING DELAY METHODOLOGY

The levels of service at the unsignalized and signalized intersections are calculated using the delay methodology in the Highway Capacity Manual. This methodology views an intersection as consisting of several lane groups. A lane group is a set of lanes serving a movement. If there are two northbound left turn lanes, then the lane group serving the northbound left turn movement has two lanes. Similarly, there may be three lanes in the lane group serving the northbound through movement, one lane in the lane group serving the northbound right turn movement, and so forth. It is also possible for one lane to serve two lane groups. A shared lane might result in there being 1.5 lanes in the northbound left turn lane group and 2.5 lanes in the northbound through lane group.

For each lane group, there is a capacity. That capacity is calculated by multiplying the number of lanes in the lane group times a theoretical maximum lane capacity per lane time's 12 adjustment factors.

Each of the 12 adjustment factors has a value of approximately 1.00. A value less than 1.00 is generally assigned when a less than desirable condition occurs.

The 12 adjustment factors are as follows:

1. Peak hour factor (to account for peaking within the peak hour)
2. Lane utilization factor (to account for not all lanes loading equally)
3. Lane width
4. Percent of heavy trucks
5. Approach grade
6. Parking
7. Bus stops at intersections
8. Area type (CBD or other)
9. Right turns
10. Left turns
11. Pedestrian activity
12. Signal progression

The maximum theoretical lane capacity and the 12 adjustment factors for it are all unknowns for which approximate estimates have been recommended in the Highway Capacity Manual. For the most part, the recommended values are not based on statistical analysis but rather on educated estimates. However, it is possible to use the delay methodology and get reasonable results as will be discussed below.

Once the lane group volume is known and the lane group capacity is known, a volume to capacity ratio can be calculated for the lane group.

With a volume to capacity ratio calculated, average delay per vehicle in a lane group can be estimated. The average delay per vehicle in a lane group is calculated using a complex formula provided by the Highway Capacity Manual, which can be simplified and described as follows:

Delay per vehicle in a lane group is a function of the following:

1. Cycle length
2. Amount of red time faced by a lane group
3. Amount of yellow time for that lane group
4. The volume to capacity ratio of the lane group

The average delay per vehicle for each lane group is calculated, and eventually an overall average delay for all vehicles entering the intersection is calculated. This average delay per vehicle is then used to judge Level of Service. The Level of Services are defined in the table that follows this discussion.

Experience has shown that when a maximum lane capacity of 1,900 vehicles per hour is used (as recommended in the Highway Capacity Manual), little or no yellow time penalty is used, and none of the 12 penalty factors are applied, calculated delay is realistic. The delay calculation for instance assumes that yellow time is totally unused. Yet experience shows that most of the yellow time is used.

An idiosyncrasy of the delay methodology is that it is possible to add traffic to an intersection and reduce the average total delay per vehicle. If the average total delay is 30 seconds per vehicle for all vehicles traveling through an intersection, and traffic is added to a movement that has an average total delay of 15 seconds per vehicle, then the overall average total delay is reduced.

The delay calculation for a lane group is based on a concept that the delay is a function of the amount of unused capacity available. As the volume approaches capacity and there is no more unused capacity available, then the delay rapidly increases. Delay is not proportional to volume, but rather increases rapidly as the unused capacity approaches zero.

Because delay is not linearly related to volumes, the delay does not reflect how close an intersection is to overloading. If an intersection is operating at Level of Service C and has an average total delay of 18 seconds per vehicle, you know very little as to what percent the traffic can increase before Level of Service E is reached. what percent the traffic can increase before Level of Service E is reached.

LEVEL OF SERVICE DESCRIPTION¹

Level of Service	Description	Average Total Delay per Vehicle (Seconds)	
		Signalized	Unsignalized
A	Level of Service A occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	0 to 10.00	0 to 10.00
B	Level of Service B generally occurs with good progression and/or short cycle lengths. More vehicles stop than for Level of Service A, causing higher levels of average total delay.	10.01 to 20.00	10.01 to 15.00
C	Level of Service C generally results when there is fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.	20.01 to 35.00	15.01 to 25.00
D	Level of Service D generally results in noticeable congestion. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	35.01 to 55.00	25.01 to 35.00
E	Level of Service E is considered to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high volume to capacity ratios. Individual cycle failures are frequent occurrences.	55.01 to 80.00	35.01 to 50.00
F	Level of Service F is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high volume to capacity ratios below 1.00 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.	80.01 and up	50.01 and up

¹ Source: [Highway Capacity Manual](#) Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 2010.0.

Existing

Entrada Housing Development

Vistro File: C:\...\AME.vistro
Report File: C:\...\AME.pdf

Scenario 1 Existing Morning Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.772	25.1	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	40.9	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	38.2	E
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	WB Thru	0.556	21.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	25.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.772

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	254	35	40	98	11	19	27	9	35	33	58
Total Analysis Volume [veh/h]	27	1016	139	160	391	43	78	109	36	141	132	230
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	75
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	23	0	13	25	0	11	22	0	17	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	70	70	70	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	26	26	8	31	31	5	11	7	13	13
g / C, Green / Cycle	0.04	0.37	0.37	0.12	0.44	0.44	0.08	0.16	0.10	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.32	0.32	0.09	0.11	0.03	0.04	0.08	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1785	1774	3547	1583	1774	1785	1774	1863	1583
c, Capacity [veh/h]	73	685	656	207	1572	702	139	278	185	338	288
d1, Uniform Delay [s]	32.83	20.56	20.57	30.16	12.25	11.20	31.25	27.27	30.65	25.33	27.54
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.12	3.32	3.50	6.08	0.08	0.04	3.55	1.52	6.42	0.73	5.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

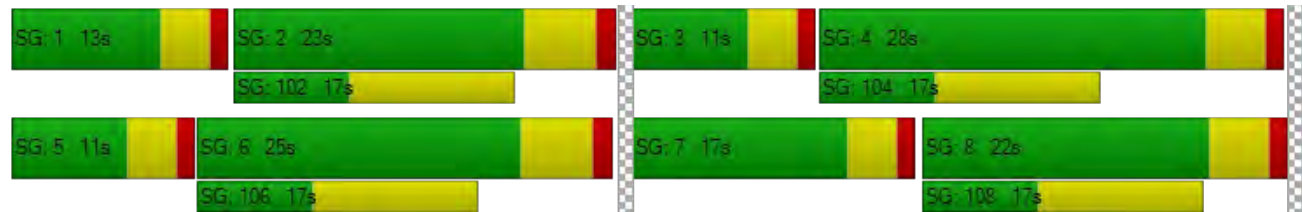
X, volume / capacity	0.37	0.86	0.86	0.77	0.25	0.06	0.56	0.52	0.76	0.39	0.80
d, Delay for Lane Group [s/veh]	35.94	23.88	24.07	36.24	12.33	11.24	34.80	28.79	37.07	26.07	32.65
Lane Group LOS	D	C	C	D	B	B	C	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.48	8.38	8.09	2.79	1.67	0.34	1.39	2.30	2.60	1.96	3.99
50th-Percentile Queue Length [ft/ln]	12.10	209.53	202.17	69.79	41.77	8.49	34.65	57.38	64.94	48.95	99.65
95th-Percentile Queue Length [veh/ln]	0.87	13.13	12.75	5.02	3.01	0.61	2.49	4.13	4.68	3.52	7.17
95th-Percentile Queue Length [ft/ln]	21.78	328.23	318.76	125.62	75.19	15.28	62.37	103.28	116.90	88.11	179.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	35.94	23.96	24.07	36.24	12.33	11.24	34.80	28.79	28.79	37.07	26.07	32.65
Movement LOS	D	C	C	D	B	B	C	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.25			18.69			30.89			32.16		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	25.11											
Intersection LOS	C											
Intersection V/C	0.772											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	40.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	256	19	2	126	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1025	78	7	505	0	0	0	9	14	0	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.12	0.00	0.03
d_M, Delay for Movement [s/veh]	8.41	0.00	0.00	10.79	0.00	0.00	25.04	40.88	9.88	38.76	40.28	15.31
Movement LOS	A	A	A	B	A	A	D	E	A	E	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.03	0.01	0.00	0.04	0.04	0.04	0.50	0.50	0.50
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.72	0.36	0.00	0.91	0.91	0.91	12.56	12.56	12.56
d_A, Approach Delay [s/veh]	0.00			0.15			9.88			27.04		
Approach LOS	A			A			A			D		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	38.2
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	254	0	1	118	4	7	0	3	0	0	1
Total Analysis Volume [veh/h]	8	1015	1	4	470	17	27	0	13	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.14	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.38	0.00	0.00	10.34	0.00	0.00	26.19	38.21	12.29	34.88	36.35	12.09
Movement LOS	A	A	A	B	A	A	D	E	B	D	E	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.02	0.01	0.00	0.55	0.55	0.55	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.56	0.00	0.00	0.44	0.22	0.00	13.63	13.63	13.63	0.44	0.44	0.44
d_A, Approach Delay [s/veh]	0.07			0.08			21.67			12.09		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.65											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	21.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TWO			TWO			TWO			TWO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	223	23	20	81	27	42	76	22	27	68	13
Total Analysis Volume [veh/h]	274	890	93	80	325	107	169	304	90	110	273	54
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	125
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	25	70	0	12	57	0	18	29	29	14	25	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	57	57	57	57	57	57	57	57	57	57	57	57
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	7	18	18	5	16	16	7	8	20	6	7	7
g / C, Green / Cycle	0.13	0.32	0.32	0.09	0.29	0.29	0.11	0.14	0.35	0.10	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.06	0.02	0.12	0.12	0.05	0.09	0.06	0.03	0.08	0.03
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1708	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	441	1123	501	306	533	489	394	479	558	351	434	194
d1, Uniform Delay [s]	23.66	17.86	14.22	24.34	16.59	16.63	23.63	23.44	12.75	23.88	23.91	22.85
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	1.43	1.31	0.18	0.45	0.53	0.59	0.74	1.40	0.13	0.51	1.51	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.62	0.79	0.19	0.26	0.42	0.43	0.43	0.64	0.16	0.31	0.63	0.28
d, Delay for Lane Group [s/veh]	25.09	19.17	14.39	24.79	17.12	17.23	24.36	24.85	12.88	24.38	25.41	23.62
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.65	4.67	0.77	0.47	2.11	1.98	1.01	1.86	0.71	0.66	1.69	0.65
50th-Percentile Queue Length [ft/ln]	41.28	116.80	19.19	11.86	52.70	49.56	25.32	46.44	17.63	16.45	42.26	16.16
95th-Percentile Queue Length [veh/ln]	2.97	8.22	1.38	0.85	3.79	3.57	1.82	3.34	1.27	1.18	3.04	1.16
95th-Percentile Queue Length [ft/ln]	74.30	205.42	34.55	21.36	94.86	89.20	45.57	83.60	31.73	29.60	76.08	29.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.09	19.17	14.39	24.79	17.15	17.23	24.36	24.85	12.88	24.38	25.41	23.62
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.11			18.36			22.79			24.93		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.09											
Intersection LOS	C											
Intersection V/C	0.556											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development

Vistro File: C:\...\PME.vistro
Report File: C:\...\PME.pdf

Scenario 1 Existing Evening Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.655	18.3	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	53.6	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	60.3	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	WB Left	0.732	32.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	18.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.655

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	117	34	35	251	28	17	17	12	34	23	29
Total Analysis Volume [veh/h]	54	469	138	140	1002	113	70	68	47	135	92	115
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	48	0	37	73	0	17	22	0	23	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	52	52	52	52	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	17	17	6	19	19	4	6	6	7	7
g / C, Green / Cycle	0.07	0.32	0.32	0.12	0.36	0.36	0.09	0.11	0.12	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.17	0.17	0.08	0.28	0.07	0.04	0.07	0.08	0.05	0.07
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1737	1774	1863	1583
c, Capacity [veh/h]	130	590	544	207	1276	570	152	189	204	258	219
d1, Uniform Delay [s]	23.26	14.76	14.78	22.25	15.00	11.59	22.84	22.33	22.25	20.51	21.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.10	0.75	0.83	3.84	1.10	0.17	2.15	3.12	3.61	0.84	1.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.53	0.54	0.68	0.79	0.20	0.46	0.61	0.66	0.36	0.53
d, Delay for Lane Group [s/veh]	25.36	15.51	15.61	26.09	16.11	11.76	24.99	25.45	25.86	21.35	22.98
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.64	2.63	2.46	1.67	4.38	0.76	0.87	1.43	1.70	1.02	1.34
50th-Percentile Queue Length [ft/ln]	16.04	65.70	61.49	41.71	109.46	18.89	21.68	35.86	42.47	25.42	33.61
95th-Percentile Queue Length [veh/ln]	1.16	4.73	4.43	3.00	7.81	1.36	1.56	2.58	3.06	1.83	2.42
95th-Percentile Queue Length [ft/ln]	28.88	118.25	110.68	75.07	195.25	34.00	39.02	64.55	76.45	45.75	60.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.36	15.54	15.61	26.09	16.11	11.76	24.99	25.45	25.45	25.86	21.35	22.98
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.36			16.83			25.27			23.68		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.30											
Intersection LOS	B											
Intersection V/C	0.655											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	53.6
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	163	2	1	285	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	5	651	9	3	1139	1	0	0	4	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.08	0.00	0.02
d_M, Delay for Movement [s/veh]	10.96	0.00	0.00	8.91	0.00	0.00	47.55	52.33	12.81	34.63	53.58	12.23
Movement LOS	B	A	A	A	A	A	E	F	B	D	F	B
95th-Percentile Queue Length [veh/ln]	0.02	0.01	0.00	0.01	0.00	0.00	0.03	0.03	0.03	0.33	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.62	0.31	0.00	0.24	0.12	0.00	0.65	0.65	0.65	8.34	8.34	8.34
d_A, Approach Delay [s/veh]	0.08			0.02			12.81			23.43		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.35											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	60.3
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	162	1	2	281	6	3	0	3	1	0	2
Total Analysis Volume [veh/h]	16	649	5	9	1123	26	13	0	13	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.16	0.00	0.03	0.03	0.00	0.01
d_M, Delay for Movement [s/veh]	11.12	0.00	0.00	8.91	0.00	0.00	55.44	60.31	18.60	35.72	56.51	11.00
Movement LOS	B	A	A	A	A	A	F	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.08	0.00	0.00	0.03	0.01	0.00	0.66	0.66	0.66	0.15	0.15	0.15
95th-Percentile Queue Length [ft/ln]	2.04	0.00	0.00	0.73	0.37	0.00	16.61	16.61	16.61	3.67	3.67	3.67
d_A, Approach Delay [s/veh]	0.27			0.07			37.02			18.61		
Approach LOS	A			A			E			C		
d_I, Intersection Delay [s/veh]	0.78											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	32.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.732

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TWO			TWO			TWO			TWO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	105	36	45	224	22	49	181	85	55	87	14
Total Analysis Volume [veh/h]	230	418	146	182	895	88	196	723	340	219	348	56
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	23	0	12	23	0	32	43	43	12	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	33	33	7	33	33	7	22	35	7	22	22
g / C, Green / Cycle	0.08	0.37	0.37	0.08	0.37	0.37	0.08	0.25	0.39	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.09	0.05	0.27	0.27	0.06	0.20	0.21	0.06	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1805	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	289	1311	585	267	687	666	288	878	614	270	859	383
d1, Uniform Delay [s]	40.58	20.33	19.75	40.53	24.55	24.56	40.16	32.09	21.53	40.93	28.73	26.86
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	5.01	0.64	1.02	3.05	6.60	6.83	2.82	2.02	0.78	5.84	0.31	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.80	0.32	0.25	0.68	0.73	0.73	0.68	0.82	0.55	0.81	0.41	0.15
d, Delay for Lane Group [s/veh]	45.58	20.97	20.77	43.58	31.15	31.39	42.98	34.11	22.31	46.77	29.04	27.04
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.62	3.06	2.16	2.01	9.74	9.49	2.17	7.39	5.43	2.55	3.10	0.94
50th-Percentile Queue Length [ft/ln]	65.40	76.49	54.08	50.29	243.45	237.28	54.36	184.85	135.76	63.84	77.45	23.49
95th-Percentile Queue Length [veh/ln]	4.71	5.51	3.89	3.62	14.86	14.54	3.91	11.85	9.25	4.60	5.58	1.69
95th-Percentile Queue Length [ft/ln]	117.72	137.68	97.35	90.52	371.39	363.59	97.85	296.33	231.30	114.91	139.41	42.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.58	20.97	20.77	43.58	31.25	31.39	42.98	34.11	22.31	46.77	29.04	27.04
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	28.06			33.19			32.30			35.09		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	32.15											
Intersection LOS	C											
Intersection V/C	0.732											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Existing Plus Project

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.003	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.775	25.3	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	42.9	E
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.039	23.0	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	41.3	E
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	WB Thru	0.563	21.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Southbound		Eastbound		Westbound	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Southbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	0	39	24	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	2	1	4	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	2	1	43	28	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	11	7	0
Total Analysis Volume [veh/h]	3	2	1	45	29	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.91	8.46	7.28	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.05	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	8.73		0.16		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.63					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.775

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	9	2	0	4	0	0	0	1	1	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	830	114	129	320	35	63	88	30	115	107	186
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	257	35	40	99	11	19	27	9	36	33	58
Total Analysis Volume [veh/h]	28	1027	141	160	396	43	78	109	37	142	132	230
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	65	0	21	72	0	12	25	0	19	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	71	71	71	71	71	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	26	26	8	32	32	6	11	7	13	13
g / C, Green / Cycle	0.04	0.37	0.37	0.12	0.45	0.45	0.08	0.15	0.10	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.32	0.32	0.09	0.11	0.03	0.04	0.08	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1785	1774	3547	1583	1774	1783	1774	1863	1583
c, Capacity [veh/h]	75	691	663	207	1580	705	138	275	186	338	287
d1, Uniform Delay [s]	33.11	20.65	20.67	30.48	12.29	11.23	31.60	27.66	30.95	25.61	27.84
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.09	3.33	3.52	6.11	0.08	0.04	3.62	1.58	6.42	0.74	5.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.86	0.86	0.77	0.25	0.06	0.57	0.53	0.76	0.39	0.80
d, Delay for Lane Group [s/veh]	36.20	23.98	24.19	36.58	12.38	11.26	35.22	29.25	37.36	26.35	32.99
Lane Group LOS	D	C	C	D	B	B	D	C	D	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.51	8.57	8.27	2.82	1.71	0.34	1.40	2.35	2.64	1.98	4.03
50th-Percentile Queue Length [ft/ln]	12.65	214.18	206.73	70.60	42.74	8.56	35.08	58.66	66.06	49.55	100.85
95th-Percentile Queue Length [veh/ln]	0.91	13.37	12.99	5.08	3.08	0.62	2.53	4.22	4.76	3.57	7.26
95th-Percentile Queue Length [ft/ln]	22.76	334.18	324.63	127.07	76.92	15.41	63.15	105.59	118.91	89.19	181.54

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	36.20	24.07	24.19	36.58	12.38	11.26	35.22	29.25	29.25	37.36	26.35	32.99
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	24.37			18.76			31.33			32.48		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	25.27											
Intersection LOS	C											
Intersection V/C	0.775											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	42.9
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	8	0	0	7	2	7	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	946	71	6	469	2	7	0	13	13	0	13
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	258	19	2	128	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1034	78	7	513	2	8	0	14	14	0	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.05	0.00	0.02	0.12	0.00	0.03
d_M, Delay for Movement [s/veh]	8.45	0.00	0.00	10.84	0.00	0.00	26.41	42.90	10.58	40.35	41.83	15.62
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	C
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.01	0.00	0.21	0.21	0.21	0.52	0.52	0.52
95th-Percentile Queue Length [ft/ln]	0.22	0.11	0.00	0.73	0.36	0.00	5.17	5.17	5.17	13.08	13.08	13.08
d_A, Approach Delay [s/veh]	0.02			0.15			16.34			27.98		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	0.74											
Intersection LOS	E											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	23.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	0	1008	475	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	3	5	7	8	26
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	1011	480	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	266	126	2	2	7
Total Analysis Volume [veh/h]	21	1064	505	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.04	0.04
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	0.00	23.01	10.44
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.06	0.03	0.00	0.00	0.24	0.24
95th-Percentile Queue Length [ft/ln]	1.46	0.73	0.00	0.00	6.04	6.04
d_A, Approach Delay [s/veh]	0.16		0.00		13.31	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	41.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	19	0	0	27	4	4	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	998	1	4	481	20	30	0	16	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	259	0	1	125	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1034	1	4	498	21	31	0	17	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.17	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.48	0.00	0.00	10.43	0.00	0.00	28.36	41.32	13.26	36.93	38.83	12.20
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.70	0.70	0.70	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.65	0.00	0.00	0.45	0.23	0.00	17.55	17.55	17.55	0.45	0.45	0.45
d_A, Approach Delay [s/veh]	0.07			0.08			23.02			12.20		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.78											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.563

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TWO			THREE			TWO			TWO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	11	8	8	6	0	0	0	0	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	250	818	85	84	304	106	160	277	82	100	249	54
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	224	23	23	83	29	44	76	22	27	68	15
Total Analysis Volume [veh/h]	274	897	93	92	333	116	175	304	90	110	273	59
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	72	0	13	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	58	58	58	58	58	58	58	58	58	58	58	58
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	7	18	18	5	17	17	7	8	20	6	7	7
g / C, Green / Cycle	0.13	0.32	0.32	0.09	0.29	0.29	0.11	0.13	0.35	0.10	0.12	0.12
(v / s)_i Volume / Saturation Flow Rate	0.08	0.25	0.06	0.03	0.12	0.13	0.05	0.09	0.06	0.03	0.08	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1702	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	438	1125	502	324	545	498	393	475	553	347	429	191
d1, Uniform Delay [s]	23.96	18.07	14.34	24.42	16.56	16.60	23.94	23.74	13.00	24.18	24.24	23.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	1.47	1.34	0.18	0.48	0.53	0.60	0.79	1.44	0.14	0.52	1.58	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.63	0.80	0.19	0.28	0.43	0.43	0.45	0.64	0.16	0.32	0.64	0.31
d, Delay for Lane Group [s/veh]	25.43	19.41	14.52	24.90	17.09	17.20	24.74	25.18	13.13	24.70	25.82	24.14
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.68	4.79	0.78	0.55	2.21	2.07	1.07	1.89	0.72	0.67	1.72	0.72
50th-Percentile Queue Length [ft/ln]	41.97	119.79	19.47	13.78	55.36	51.78	26.69	47.22	18.03	16.71	43.03	18.06
95th-Percentile Queue Length [veh/ln]	3.02	8.38	1.40	0.99	3.99	3.73	1.92	3.40	1.30	1.20	3.10	1.30
95th-Percentile Queue Length [ft/ln]	75.55	209.54	35.04	24.81	99.65	93.20	48.05	85.00	32.45	30.08	77.45	32.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.43	19.41	14.52	24.90	17.12	17.20	24.74	25.18	13.13	24.70	25.82	24.14
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.35			18.46			23.14			25.31		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.33											
Intersection LOS	C											
Intersection V/C	0.563											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.002	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.661	18.4	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	57.7	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.082	44.0	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	68.7	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	WB Left	0.736	32.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Southbound		Eastbound		Westbound	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Southbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	0	26	40	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	4	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	2	30	43	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	8	11	1
Total Analysis Volume [veh/h]	2	1	2	32	45	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.93	8.53	7.31	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.10	0.10	0.00	0.00
d_A, Approach Delay [s/veh]	8.80		0.43		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.48					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	18.4
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	6	2	0	9	0	0	0	1	2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	456	134	134	971	108	67	65	46	132	88	110
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	119	35	35	253	28	17	17	12	34	23	29
Total Analysis Volume [veh/h]	55	475	140	140	1011	113	70	68	48	138	92	115
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	47	0	38	73	0	17	22	0	23	28	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	53	53	53	53	53	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	17	17	6	19	19	5	6	6	7	7
g / C, Green / Cycle	0.07	0.32	0.32	0.12	0.36	0.36	0.09	0.11	0.12	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.17	0.17	0.08	0.29	0.07	0.04	0.07	0.08	0.05	0.07
s, saturation flow rate [veh/h]	1774	1863	1719	1774	3547	1583	1774	1736	1774	1863	1583
c, Capacity [veh/h]	131	597	551	206	1285	573	152	189	205	258	219
d1, Uniform Delay [s]	23.45	14.76	14.79	22.49	15.08	11.61	23.06	22.55	22.48	20.69	21.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.12	0.74	0.82	3.93	1.11	0.17	2.17	3.22	3.83	0.83	1.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.53	0.54	0.68	0.79	0.20	0.46	0.61	0.67	0.36	0.52
d, Delay for Lane Group [s/veh]	25.56	15.51	15.61	26.42	16.18	11.77	25.23	25.77	26.32	21.52	23.15
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.66	2.68	2.51	1.69	4.47	0.76	0.88	1.47	1.76	1.03	1.36
50th-Percentile Queue Length [ft/ln]	16.50	67.03	62.69	42.28	111.63	19.03	21.91	36.64	44.11	25.67	33.94
95th-Percentile Queue Length [veh/ln]	1.19	4.83	4.51	3.04	7.93	1.37	1.58	2.64	3.18	1.85	2.44
95th-Percentile Queue Length [ft/ln]	29.70	120.65	112.84	76.10	198.27	34.25	39.44	65.96	79.40	46.21	61.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.56	15.54	15.61	26.42	16.18	11.77	25.23	25.77	25.77	26.32	21.52	23.15
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.38			16.92			25.57			23.98		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.41											
Intersection LOS	B											
Intersection V/C	0.661											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	57.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	8	0	0	8	7	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	639	9	3	1112	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	165	2	1	287	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	659	9	3	1148	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.05	0.00	0.01	0.09	0.00	0.02
d_M, Delay for Movement [s/veh]	11.14	0.00	0.00	8.94	0.00	0.00	52.01	57.19	14.34	36.91	57.68	12.51
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.07	0.04	0.00	0.01	0.00	0.00	0.20	0.20	0.20	0.36	0.36	0.36
95th-Percentile Queue Length [ft/ln]	1.79	0.89	0.00	0.25	0.12	0.00	5.03	5.03	5.03	8.90	8.90	8.90
d_A, Approach Delay [s/veh]	0.23			0.02			29.41			24.71		
Approach LOS	A			A			D			C		
d_I, Intersection Delay [s/veh]	0.54											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	44.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.082

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	0	649	1119	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	9	2	8	8	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	658	1121	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	173	295	2	2	5
Total Analysis Volume [veh/h]	19	693	1180	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.08	0.04
d_M, Delay for Movement [s/veh]	11.38	0.00	0.00	0.00	44.02	15.30
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.10	0.05	0.00	0.00	0.42	0.42
95th-Percentile Queue Length [ft/ln]	2.38	1.19	0.00	0.00	10.41	10.41
d_A, Approach Delay [s/veh]	0.30		0.00		23.81	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.45					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	68.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	23	0	0	17	3	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	650	5	9	1102	28	17	0	15	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	168	1	2	285	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	19	673	5	9	1141	29	18	0	16	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.24	0.00	0.03	0.04	0.00	0.01
d_M, Delay for Movement [s/veh]	11.27	0.00	0.00	9.00	0.00	0.00	63.02	68.66	23.21	38.25	60.80	11.18
Movement LOS	B	A	A	A	A	A	F	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.03	0.01	0.00	1.03	1.03	1.03	0.16	0.16	0.16
95th-Percentile Queue Length [ft/ln]	2.48	0.00	0.00	0.75	0.37	0.00	25.73	25.73	25.73	3.91	3.91	3.91
d_A, Approach Delay [s/veh]	0.31			0.07			44.29			19.51		
Approach LOS	A			A			E			C		
d_I, Intersection Delay [s/veh]	1.07											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	32.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TWO			THREE			TWO			TWO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	6	5	6	7	0	0	0	0	10
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	225	416	143	184	882	92	199	709	333	215	341	65
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	106	36	47	225	23	51	181	85	55	87	17
Total Analysis Volume [veh/h]	230	424	146	188	900	94	203	723	340	219	348	66
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	12	23	0	12	23	0	32	43	43	12	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	33	33	7	33	33	8	22	35	7	22	22
g / C, Green / Cycle	0.08	0.37	0.37	0.08	0.37	0.37	0.09	0.25	0.39	0.08	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.09	0.05	0.27	0.27	0.06	0.20	0.21	0.06	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1802	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	289	1310	585	267	687	664	296	878	614	270	851	380
d1, Uniform Delay [s]	40.58	20.37	19.76	40.59	24.66	24.67	40.05	32.09	21.53	40.93	28.90	27.20
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	5.01	0.66	1.02	3.36	6.87	7.13	2.81	2.02	0.78	5.84	0.32	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.80	0.32	0.25	0.70	0.73	0.74	0.69	0.82	0.55	0.81	0.41	0.17
d, Delay for Lane Group [s/veh]	45.58	21.03	20.78	43.95	31.53	31.80	42.87	34.10	22.31	46.77	29.22	27.42
Lane Group LOS	D	C	C	D	C	C	D	C	C	D	C	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.62	3.11	2.16	2.09	9.93	9.67	2.25	7.39	5.43	2.55	3.11	1.12
50th-Percentile Queue Length [ft/ln]	65.40	77.77	54.10	52.23	248.21	241.69	56.24	184.85	135.76	63.84	77.74	27.98
95th-Percentile Queue Length [veh/ln]	4.71	5.60	3.90	3.76	15.10	14.77	4.05	11.85	9.25	4.60	5.60	2.01
95th-Percentile Queue Length [ft/ln]	117.72	139.99	97.38	94.01	377.39	369.16	101.23	296.33	231.30	114.91	139.93	50.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	45.58	21.03	20.78	43.95	31.65	31.80	42.87	34.10	22.31	46.77	29.22	27.42
Movement LOS	D	C	C	D	C	C	D	C	C	D	C	C
d_A, Approach Delay [s/veh]	28.04			33.62			32.34			35.10		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	32.29											
Intersection LOS	C											
Intersection V/C	0.736											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development
Vistro File: C:\...\AME.vistro
Report File: C:\...\AMEPI.pdf
Scenario 3 Existing Plus Project Morning Peak Hour - With Improvements
8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.061	21.9	C
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.020	14.2	B
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	21.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 21.9
 Level Of Service: C
 Volume to Capacity (v/c): 0.061

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	8	0	0	7	2	7	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	946	71	6	469	2	7	0	13	13	0	13
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	258	19	2	128	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1034	78	7	513	2	8	0	14	14	0	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.00	0.02	0.06	0.00	0.03
d_M, Delay for Movement [s/veh]	8.45	0.00	0.00	10.84	0.00	0.00	15.15	20.24	10.13	21.92	19.77	13.28
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.01	0.00	0.13	0.13	0.13	0.29	0.29	0.29
95th-Percentile Queue Length [ft/ln]	0.22	0.00	0.00	0.73	0.36	0.00	3.18	3.18	3.18	7.29	7.29	7.29
d_A, Approach Delay [s/veh]	0.02			0.15			11.96			17.60		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.51											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.020

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	3	5	7	8	26
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	1011	480	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	266	126	2	2	7
Total Analysis Volume [veh/h]	21	1064	505	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	8.50	0.00	0.00	0.00	14.16	10.16
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.06	0.00	0.00	0.00	0.18	0.18
95th-Percentile Queue Length [ft/ln]	1.53	0.00	0.00	0.00	4.42	4.42
d_A, Approach Delay [s/veh]	0.16		0.00		11.07	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.35					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 21.2
 Level Of Service: C
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	19	0	0	27	4	4	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	998	1	4	481	20	30	0	16	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	259	0	1	125	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1034	1	4	498	21	31	0	17	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.08	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.48	0.00	0.00	10.43	0.00	0.00	15.58	19.83	10.73	21.16	18.90	12.20
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.35	0.35	0.35	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.65	0.00	0.00	0.45	0.23	0.00	8.80	8.80	8.80	0.45	0.45	0.45
d_A, Approach Delay [s/veh]	0.07			0.08			13.86			12.20		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.51											
Intersection LOS	C											

Entrada Housing Development
Vistro File: C:\...\PME.vistro
Report File: C:\...\PMEPI.pdf
Scenario 3 Existing Plus Project Evening Peak Hour - With Improvements
8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.021	24.1	C
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.034	21.3	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.095	26.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type:

Two-way stop

Delay (sec / veh):

24.1

Analysis Method:

HCM 2010

Level Of Service:

C

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.021

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	8	0	0	8	7	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	639	9	3	1112	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	165	2	1	287	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	659	9	3	1148	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.01	0.04	0.00	0.02
d_M, Delay for Movement [s/veh]	11.14	0.00	0.00	8.94	0.00	0.00	24.13	21.49	13.22	17.41	22.22	10.89
Movement LOS	B	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.01	0.00	0.00	0.10	0.10	0.10	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	1.79	0.00	0.00	0.25	0.12	0.00	2.61	2.61	2.61	4.18	4.18	4.18
d_A, Approach Delay [s/veh]	0.23			0.02			17.59			14.15		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.36											
Intersection LOS	C											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	21.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	9	2	8	8	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	658	1121	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	173	295	2	2	5
Total Analysis Volume [veh/h]	19	693	1180	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.03	0.04
d_M, Delay for Movement [s/veh]	11.38	0.00	0.00	0.00	21.34	13.83
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.00	0.25	0.25
95th-Percentile Queue Length [ft/ln]	2.52	0.00	0.00	0.00	6.18	6.18
d_A, Approach Delay [s/veh]	0.30		0.00		16.06	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.34					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 26.1
 Level Of Service: D
 Volume to Capacity (v/c): 0.095

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	23	0	0	17	3	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	650	5	9	1102	28	17	0	15	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	168	1	2	285	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	19	673	5	9	1141	29	18	0	16	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.10	0.00	0.03	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	11.27	0.00	0.00	9.00	0.00	0.00	26.12	23.52	14.79	17.78	22.96	10.68
Movement LOS	B	A	A	A	A	A	D	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.10	0.00	0.00	0.03	0.01	0.00	0.44	0.44	0.44	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	2.48	0.00	0.00	0.75	0.37	0.00	11.02	11.02	11.02	2.13	2.13	2.13
d_A, Approach Delay [s/veh]	0.31			0.07			20.79			12.86		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.61											
Intersection LOS	D											

Opening Year (2020) Without Project

Entrada Housing Development
Vistro File: C:\...\AME.vistro Scenario 4 Opening Year (2020) Without Project Morning Peak Hour
Report File: C:\...\AMOYWO.pdf 8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.794	26.9	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	44.5	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	41.4	E
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	WB Thru	0.573	21.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)Control Type:
Analysis Method:
Analysis Period:Signalized
HCM 2010
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):26.9
C
0.794**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	4	0	0	0	2	0	0	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	856	116	138	329	36	66	94	30	119	112	197
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	265	36	43	102	11	20	29	9	37	35	61
Total Analysis Volume [veh/h]	28	1059	144	171	407	45	82	116	37	147	139	244
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	64	0	21	71	0	13	26	0	19	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	76	76	76	76	76	76	76	76	76	76	76
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	29	29	9	35	35	6	12	8	14	14
g / C, Green / Cycle	0.04	0.38	0.38	0.12	0.46	0.46	0.08	0.16	0.11	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.33	0.10	0.11	0.03	0.05	0.09	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1786	1774	3547	1583	1774	1787	1774	1863	1583
c, Capacity [veh/h]	73	704	675	217	1627	726	135	280	190	350	298
d1, Uniform Delay [s]	35.61	22.01	22.04	32.51	12.62	11.50	34.15	29.65	33.15	27.16	29.72
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.25	3.53	3.75	6.27	0.08	0.04	4.41	1.65	6.59	0.73	5.54
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	0.87	0.87	0.79	0.25	0.06	0.61	0.55	0.77	0.40	0.82
d, Delay for Lane Group [s/veh]	38.86	25.54	25.79	38.79	12.70	11.53	38.56	31.30	39.74	27.89	35.26
Lane Group LOS	D	C	C	D	B	B	D	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.55	9.67	9.35	3.26	1.88	0.38	1.62	2.67	2.95	2.25	4.65
50th-Percentile Queue Length [ft/ln]	13.70	241.85	233.82	81.49	47.08	9.57	40.41	66.69	73.72	56.28	116.13
95th-Percentile Queue Length [veh/ln]	0.99	14.77	14.37	5.87	3.39	0.69	2.91	4.80	5.31	4.05	8.18
95th-Percentile Queue Length [ft/ln]	24.66	369.37	359.21	146.68	84.75	17.23	72.74	120.04	132.69	101.30	204.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.86	25.65	25.79	38.79	12.70	11.53	38.56	31.30	31.30	39.74	27.89	35.26
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	25.96			19.77			33.83			34.57		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	26.94											
Intersection LOS	C											
Intersection V/C	0.794											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type:

Two-way stop

Delay (sec / veh):

44.5

Analysis Method:

HCM 2010

Level Of Service:

E

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	978	74	6	480	0	0	0	8	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	267	20	2	131	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1069	81	7	525	0	0	0	9	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.14	0.00	0.03
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	11.04	0.00	0.00	26.58	44.48	9.95	42.68	44.29	16.49
Movement LOS	A	A	A	B	A	A	D	E	A	E	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.03	0.02	0.00	0.04	0.04	0.04	0.60	0.60	0.60
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.75	0.38	0.00	0.93	0.93	0.93	14.91	14.91	14.91
d_A, Approach Delay [s/veh]	0.00			0.15			9.95			29.59		
Approach LOS	A			A			A			D		
d_I, Intersection Delay [s/veh]	0.61											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 41.4
 Level Of Service: E
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	1020	1	4	472	17	27	0	14	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	264	0	1	122	4	7	0	4	0	0	1
Total Analysis Volume [veh/h]	8	1057	1	4	489	18	28	0	15	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.15	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.44	0.00	0.00	10.54	0.00	0.00	27.97	41.45	12.83	37.73	39.24	12.32
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.02	0.01	0.00	0.62	0.62	0.62	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.57	0.00	0.00	0.46	0.23	0.00	15.49	15.49	15.49	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.06			0.08			22.69			12.32		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.69											
Intersection LOS	E											

Intersection Level Of Service Report**Intersection 6: Chicago Ave (NS) at University Ave (EW)**

Control Type:

Signalized

Delay (sec / veh):

21.6

Analysis Method:

HCM 2010

Level Of Service:

C

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.573

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	三三三			三三三			三三三			三三三		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	0	0	0	0	8	8	1	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	262	845	90	76	308	102	160	296	93	105	263	52
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	232	25	21	84	28	44	81	25	29	72	14
Total Analysis Volume [veh/h]	287	927	99	83	338	112	175	325	102	115	288	57
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	29	29	16	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	59	59	59	59	59	59	59	59	59	59	59	59
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	19	19	5	17	17	7	8	21	6	7	7
g / C, Green / Cycle	0.13	0.33	0.33	0.09	0.29	0.29	0.11	0.14	0.35	0.10	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.06	0.02	0.13	0.13	0.05	0.09	0.06	0.03	0.08	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1707	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	453	1157	516	306	544	499	386	489	563	348	450	201
d1, Uniform Delay [s]	24.36	18.19	14.33	25.18	16.95	17.00	24.59	24.22	13.15	24.75	24.56	23.41
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	1.48	1.34	0.18	0.47	0.53	0.60	0.83	1.56	0.15	0.55	1.53	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.63	0.80	0.19	0.27	0.43	0.44	0.45	0.67	0.18	0.33	0.64	0.28
d, Delay for Lane Group [s/veh]	25.84	19.53	14.51	25.66	17.49	17.60	25.42	25.78	13.30	25.30	26.08	24.17
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.80	5.06	0.84	0.51	2.28	2.14	1.10	2.08	0.84	0.72	1.85	0.71
50th-Percentile Queue Length [ft/ln]	45.02	126.47	21.02	12.84	57.09	53.56	27.50	51.99	20.95	17.96	46.32	17.65
95th-Percentile Queue Length [veh/ln]	3.24	8.75	1.51	0.92	4.11	3.86	1.98	3.74	1.51	1.29	3.34	1.27
95th-Percentile Queue Length [ft/ln]	81.03	218.69	37.84	23.12	102.76	96.40	49.50	93.58	37.70	32.33	83.38	31.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.84	19.53	14.51	25.66	17.52	17.60	25.42	25.78	13.30	25.30	26.08	24.17
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.53			18.80			23.56			25.65		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.65											
Intersection LOS	C											
Intersection V/C	0.573											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development
Vistro File: C:\...\PME.vistro
Report File: C:\...\PMOYWO.pdf
Scenario 4 Opening Year (2020) Without Project Evening Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.674	18.8	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	59.3	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	68.5	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	SB Left	0.731	40.4	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 2: Chicago Ave (NS) at Linden St (EW)**

Control Type:

Signalized

Delay (sec / veh):

18.8

Analysis Method:

HCM 2010

Level Of Service:

B

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.674

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	5	2	0	0	2	0	0	2	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	54	470	137	144	1002	112	70	70	47	135	94	119
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	122	36	38	261	29	18	18	12	35	24	31
Total Analysis Volume [veh/h]	56	490	143	150	1044	117	73	73	49	141	98	124
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	61	0	24	73	0	22	22	0	23	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	54	54	54	54	54	54	54	54	54	54	54
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	18	18	6	20	20	5	6	6	7	7
g / C, Green / Cycle	0.07	0.33	0.33	0.12	0.37	0.37	0.09	0.11	0.11	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.08	0.29	0.07	0.04	0.07	0.08	0.05	0.08
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1739	1774	1863	1583
c, Capacity [veh/h]	132	615	568	206	1319	589	154	190	202	254	216
d1, Uniform Delay [s]	24.07	14.82	14.84	23.21	15.21	11.59	23.66	23.22	23.19	21.42	22.02
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.17	0.72	0.79	4.87	1.11	0.16	2.26	3.63	4.29	0.96	2.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.53	0.54	0.73	0.79	0.20	0.47	0.64	0.70	0.39	0.57
d, Delay for Lane Group [s/veh]	26.24	15.54	15.63	28.09	16.31	11.75	25.92	26.85	27.48	22.38	24.42
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.69	2.82	2.63	1.92	4.74	0.80	0.94	1.60	1.88	1.14	1.54
50th-Percentile Queue Length [ft/ln]	17.33	70.47	65.86	47.88	118.58	20.06	23.56	40.11	46.98	28.48	38.45
95th-Percentile Queue Length [veh/ln]	1.25	5.07	4.74	3.45	8.31	1.44	1.70	2.89	3.38	2.05	2.77
95th-Percentile Queue Length [ft/ln]	31.20	126.85	118.55	86.18	207.87	36.10	42.41	72.20	84.57	51.27	69.21

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.24	15.57	15.63	28.09	16.31	11.75	25.92	26.85	26.85	27.48	22.38	24.42
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.45			17.25			26.50			25.06		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.85											
Intersection LOS	B											
Intersection V/C	0.674											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 59.3
 Level Of Service: F
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	658	9	3	1150	1	0	0	4	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	170	2	1	297	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	5	679	9	3	1187	1	0	0	4	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.09	0.00	0.02
d_M, Delay for Movement [s/veh]	11.22	0.00	0.00	9.00	0.00	0.00	52.39	57.83	13.10	37.56	59.35	12.68
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.03	0.01	0.00	0.01	0.01	0.00	0.03	0.03	0.03	0.36	0.36	0.36
95th-Percentile Queue Length [ft/ln]	0.65	0.32	0.00	0.25	0.13	0.00	0.67	0.67	0.67	9.08	9.08	9.08
d_A, Approach Delay [s/veh]	0.08			0.02			13.10			25.12		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	0.36											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)Control Type: Two-way stop
Analysis Method: HCM 2010
Analysis Period: 15 minutesDelay (sec / veh): 68.5
Level Of Service: F
Volume to Capacity (v/c): 0.000**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	654	5	9	1130	26	14	0	14	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	169	1	2	292	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	17	677	5	9	1170	27	14	0	14	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.19	0.00	0.03	0.04	0.00	0.01
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.01	0.00	0.00	62.88	68.48	21.07	38.90	62.87	11.22
Movement LOS	B	A	A	A	A	A	F	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.03	0.02	0.00	0.81	0.81	0.81	0.16	0.16	0.16
95th-Percentile Queue Length [ft/ln]	2.27	0.00	0.00	0.75	0.38	0.00	20.32	20.32	20.32	3.97	3.97	3.97
d_A, Approach Delay [s/veh]	0.28			0.07			41.98			19.74		
Approach LOS	A			A			E			C		
d_I, Intersection Delay [s/veh]	0.88											
Intersection LOS	F											

Intersection Level Of Service Report**Intersection 6: Chicago Ave (NS) at University Ave (EW)**Control Type:
Analysis Method:
Analysis Period:Signalized
HCM 2010
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):40.4
D
0.731**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	三三三			三三三			三三三			三三三		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	1	2	1	1	0	0	6	5	2	8	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	242	427	151	186	913	89	200	743	351	226	363	58
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	109	39	47	233	23	51	190	90	58	93	15
Total Analysis Volume [veh/h]	247	436	154	190	932	91	204	758	358	231	370	59
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	17	56	0	15	54	0	15	42	42	17	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	118	118	118	118	118	118	118	118	118	118	118	118
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	22	49	49	9	36	36	9	29	56	10	30	30
g / C, Green / Cycle	0.19	0.41	0.41	0.08	0.31	0.31	0.08	0.25	0.48	0.09	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.10	0.06	0.28	0.28	0.06	0.21	0.23	0.07	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1805	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	638	1467	655	260	574	556	275	883	756	304	912	407
d1, Uniform Delay [s]	42.21	23.14	22.48	53.40	39.17	39.20	53.12	42.36	20.84	52.59	36.36	33.83
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	0.38	0.11	0.18	3.91	5.66	5.91	3.90	2.58	0.46	3.89	0.29	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.39	0.30	0.24	0.73	0.90	0.91	0.74	0.86	0.47	0.76	0.41	0.14
d, Delay for Lane Group [s/veh]	42.60	23.25	22.67	57.31	44.83	45.11	57.01	44.94	21.30	56.48	36.65	33.99
Lane Group LOS	D	C	C	E	D	D	E	D	C	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.14	3.97	2.74	2.85	14.80	14.42	3.08	10.67	6.58	3.48	4.42	1.32
50th-Percentile Queue Length [ft/ln]	78.49	99.17	68.51	71.24	370.10	360.53	76.96	266.84	164.41	86.88	110.46	32.96
95th-Percentile Queue Length [veh/ln]	5.65	7.14	4.93	5.13	21.11	20.65	5.54	16.03	10.78	6.26	7.87	2.37
95th-Percentile Queue Length [ft/ln]	141.28	178.51	123.31	128.23	527.85	516.23	138.53	400.79	269.56	156.38	196.65	59.33

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.60	23.25	22.67	57.31	44.95	45.11	57.01	44.94	21.30	56.48	36.65	33.99
Movement LOS	D	C	C	E	D	D	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	28.85			46.90			40.39			43.35		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	40.44											
Intersection LOS	D											
Intersection V/C	0.731											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 5 Opening Year (2020) Without Project Morning
Peak Hour - With Improvements

Report File: C:\...\AMOYWOI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.068	22.7	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	21.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 22.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.068

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	978	74	6	480	0	0	0	8	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	267	20	2	131	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1069	81	7	525	0	0	0	9	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.07	0.00	0.03
d_M, Delay for Movement [s/veh]	8.47	0.00	0.00	11.04	0.00	0.00	15.13	20.50	9.95	22.69	20.31	13.64
Movement LOS	A	A	A	B	A	A	C	C	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.03	0.02	0.00	0.04	0.04	0.04	0.33	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.75	0.38	0.00	0.93	0.93	0.93	8.15	8.15	8.15
d_A, Approach Delay [s/veh]	0.00			0.15			9.95			18.16		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	0.41											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 21.6
 Level Of Service: C
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	1020	1	4	472	17	27	0	14	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	264	0	1	122	4	7	0	4	0	0	1
Total Analysis Volume [veh/h]	8	1057	1	4	489	18	28	0	15	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.00	0.00	0.08	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.44	0.00	0.00	10.54	0.00	0.00	15.49	19.96	10.59	21.60	19.12	12.32
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.02	0.00	0.00	0.02	0.01	0.00	0.31	0.31	0.31	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.57	0.00	0.00	0.46	0.23	0.00	7.82	7.82	7.82	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.06			0.08			13.78			12.32		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.46											
Intersection LOS	C											

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 5 Opening Year (2020) Without Project Evening
Peak Hour - With Improvements

Report File: C:\...\PMOYWOL.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.000	24.8	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.077	26.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 24.8
 Level Of Service: C
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	658	9	3	1150	1	0	0	4	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	170	2	1	297	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	5	679	9	3	1187	1	0	0	4	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.04	0.00	0.02
d_M, Delay for Movement [s/veh]	11.22	0.00	0.00	9.00	0.00	0.00	24.76	21.64	13.10	17.38	22.24	10.97
Movement LOS	B	A	A	A	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.01	0.01	0.00	0.03	0.03	0.03	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.65	0.00	0.00	0.25	0.13	0.00	0.67	0.67	0.67	4.19	4.19	4.19
d_A, Approach Delay [s/veh]	0.08			0.02			13.10			14.18		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.23											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 26.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.077

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	654	5	9	1130	26	14	0	14	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	169	1	2	292	7	4	0	4	1	0	2
Total Analysis Volume [veh/h]	17	677	5	9	1170	27	14	0	14	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.08	0.00	0.03	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.01	0.00	0.00	26.50	23.56	14.60	17.86	23.32	10.70
Movement LOS	B	A	A	A	A	A	D	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.03	0.02	0.00	0.36	0.36	0.36	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	2.27	0.00	0.00	0.75	0.38	0.00	8.96	8.96	8.96	2.14	2.14	2.14
d_A, Approach Delay [s/veh]	0.28			0.07			20.55			12.90		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.52											
Intersection LOS	D											

Opening Year (2020) With Project

Apx - 141

Entrada Housing Development
Vistro File: C:\...\AME.vistro Scenario 6 Opening Year (2020) With Project Morning Peak Hour
Report File: C:\...\AMOYW.pdf 8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.003	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	WB Left	0.796	27.2	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	46.7	E
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.041	24.2	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	45.0	E
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	WB Thru	0.580	21.9	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Southbound		Eastbound		Westbound	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Southbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	0	39	24	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	2	1	4	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	2	1	45	29	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	12	8	0
Total Analysis Volume [veh/h]	3	2	1	47	31	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.93	8.47	7.28	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.05	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	8.75		0.15		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.60					
Intersection LOS	A					

Intersection Level Of Service Report**Intersection 2: Chicago Ave (NS) at Linden St (EW)**

Control Type:

Signalized

Delay (sec / veh):

27.2

Analysis Method:

HCM 2010

Level Of Service:

C

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.796

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	11	2	4	4	0	0	2	1	1	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	24	865	118	138	333	36	66	94	31	120	112	197
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	268	37	43	103	11	20	29	10	37	35	61
Total Analysis Volume [veh/h]	30	1071	146	171	412	45	82	116	38	149	139	244
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	65	0	21	72	0	12	25	0	19	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	77	77	77	77	77	77	77	77	77	77	77
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	3	29	29	9	35	35	6	12	8	14	14
g / C, Green / Cycle	0.04	0.38	0.38	0.12	0.46	0.46	0.08	0.15	0.11	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.02	0.33	0.33	0.10	0.12	0.03	0.05	0.09	0.08	0.07	0.15
s, saturation flow rate [veh/h]	1774	1863	1786	1774	3547	1583	1774	1785	1774	1863	1583
c, Capacity [veh/h]	77	711	681	217	1633	729	134	276	192	350	297
d1, Uniform Delay [s]	35.90	22.12	22.15	32.89	12.71	11.56	34.57	30.14	33.48	27.49	30.07
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.22	3.54	3.78	6.32	0.08	0.04	4.51	1.76	6.59	0.73	5.60
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.87	0.88	0.79	0.25	0.06	0.61	0.56	0.78	0.40	0.82
d, Delay for Lane Group [s/veh]	39.12	25.66	25.93	39.21	12.79	11.60	39.08	31.90	40.07	28.22	35.67
Lane Group LOS	D	C	C	D	B	B	D	C	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.59	9.90	9.58	3.30	1.93	0.39	1.64	2.73	3.02	2.28	4.71
50th-Percentile Queue Length [ft/ln]	14.78	247.53	239.47	82.54	48.29	9.68	40.97	68.32	75.53	57.03	117.66
95th-Percentile Queue Length [veh/ln]	1.06	15.06	14.65	5.94	3.48	0.70	2.95	4.92	5.44	4.11	8.26
95th-Percentile Queue Length [ft/ln]	26.60	376.54	366.36	148.57	86.92	17.43	73.75	122.97	135.96	102.65	206.61

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	39.12	25.77	25.93	39.21	12.79	11.60	39.08	31.90	31.90	40.07	28.22	35.67
Movement LOS	D	C	C	D	B	B	D	C	C	D	C	D
d_A, Approach Delay [s/veh]	26.11			19.90			34.39			34.96		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	27.16											
Intersection LOS	C											
Intersection V/C	0.796											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	46.7
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	986	74	6	487	2	7	0	13	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	269	20	2	133	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1078	81	7	532	2	8	0	14	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.05	0.00	0.02	0.15	0.00	0.03
d_M, Delay for Movement [s/veh]	8.51	0.00	0.00	11.09	0.00	0.00	28.07	46.68	10.74	44.46	46.00	16.88
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	C
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.02	0.00	0.22	0.22	0.22	0.62	0.62	0.62
95th-Percentile Queue Length [ft/ln]	0.22	0.11	0.00	0.76	0.38	0.00	5.49	5.49	5.49	15.53	15.53	15.53
d_A, Approach Delay [s/veh]	0.02			0.14			17.04			30.67		
Approach LOS	A			A			C			D		
d_I, Intersection Delay [s/veh]	0.80											
Intersection LOS	E											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	24.2
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	0	1008	475	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	1053	499	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	277	131	2	2	7
Total Analysis Volume [veh/h]	21	1108	525	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.04	0.04
d_M, Delay for Movement [s/veh]	8.56	0.00	0.00	0.00	24.21	10.57
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.06	0.03	0.00	0.00	0.25	0.25
95th-Percentile Queue Length [ft/ln]	1.48	0.74	0.00	0.00	6.30	6.30
d_A, Approach Delay [s/veh]	0.16		0.00		13.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.39					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	45.0
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1039	1	4	499	21	31	0	17	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	269	0	1	129	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1077	1	4	517	22	32	0	18	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.19	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.54	0.00	0.00	10.64	0.00	0.00	30.45	45.02	14.00	40.00	42.01	12.43
Movement LOS	A	A	A	B	A	A	D	E	B	E	E	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.79	0.79	0.79	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.66	0.00	0.00	0.47	0.23	0.00	19.72	19.72	19.72	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.07			0.08			24.53			12.43		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.82											
Intersection LOS	E											

Intersection Level Of Service Report**Intersection 6: Chicago Ave (NS) at University Ave (EW)**Control Type:
Analysis Method:
Analysis Period:Signalized
HCM 2010
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):21.9
C
0.580**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	三三三			三三三			三三三			三三三		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	7	2	11	8	8	6	8	8	1	4	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	262	851	90	87	316	110	166	296	93	105	263	57
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	233	25	24	87	30	46	81	25	29	72	16
Total Analysis Volume [veh/h]	287	933	99	95	346	121	182	325	102	115	288	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	8	20	20	6	18	18	7	8	21	6	7	7
g / C, Green / Cycle	0.13	0.33	0.33	0.09	0.30	0.30	0.11	0.14	0.35	0.10	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.08	0.26	0.06	0.03	0.13	0.13	0.05	0.09	0.06	0.03	0.08	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1701	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	451	1161	518	322	556	507	384	487	559	345	446	199
d1, Uniform Delay [s]	24.70	18.40	14.46	25.33	16.96	17.00	24.98	24.56	13.40	25.11	24.92	23.85
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	1.50	1.35	0.18	0.51	0.54	0.61	0.91	1.59	0.16	0.56	1.57	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.64	0.80	0.19	0.30	0.44	0.44	0.47	0.67	0.18	0.33	0.65	0.32
d, Delay for Lane Group [s/veh]	26.20	19.75	14.64	25.84	17.51	17.61	25.89	26.15	13.56	25.67	26.49	24.75
Lane Group LOS	C	B	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.83	5.18	0.85	0.60	2.40	2.24	1.17	2.11	0.86	0.73	1.89	0.80
50th-Percentile Queue Length [ft/ln]	45.79	129.55	21.34	14.88	60.02	56.01	29.18	52.87	21.42	18.27	47.15	19.97
95th-Percentile Queue Length [veh/ln]	3.30	8.92	1.54	1.07	4.32	4.03	2.10	3.81	1.54	1.32	3.39	1.44
95th-Percentile Queue Length [ft/ln]	82.43	222.89	38.41	26.78	108.03	100.82	52.52	95.17	38.56	32.89	84.87	35.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.20	19.75	14.64	25.84	17.54	17.61	25.89	26.15	13.56	25.67	26.49	24.75
Movement LOS	C	B	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	20.77			18.96			23.96			26.05		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	21.92											
Intersection LOS	C											
Intersection V/C	0.580											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development
Vistro File: C:\...\PME.vistro
Report File: C:\...\PMOYW.pdf
Scenario 6 Opening Year (2020) With Project Evening Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.002	8.9	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	SB Left	0.679	19.0	B
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	63.9	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.090	48.3	E
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	78.8	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	SB Left	0.733	41.0	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Southbound		Eastbound		Westbound	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Southbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	0	26	40	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	4	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	2	31	45	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	8	12	1
Total Analysis Volume [veh/h]	2	1	2	33	47	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.95	8.54	7.32	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.10	0.10	0.00	0.00
d_A, Approach Delay [s/veh]	8.81		0.42		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.47					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.679

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	8	2	5	11	0	0	2	1	2	2	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	476	139	144	1011	112	70	70	48	137	94	119
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	124	36	38	263	29	18	18	13	36	24	31
Total Analysis Volume [veh/h]	57	496	145	150	1053	117	73	73	50	143	98	124
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	62	0	23	73	0	22	22	0	23	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	55	55	55	55	55	55	55	55	55	55	55
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	18	18	6	20	20	5	6	6	7	7
g / C, Green / Cycle	0.07	0.33	0.33	0.12	0.37	0.37	0.09	0.11	0.11	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.03	0.18	0.18	0.08	0.30	0.07	0.04	0.07	0.08	0.05	0.08
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1738	1774	1863	1583
c, Capacity [veh/h]	133	622	574	205	1328	593	153	189	202	254	216
d1, Uniform Delay [s]	24.25	14.81	14.83	23.44	15.26	11.59	23.87	23.45	23.43	21.61	22.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.19	0.71	0.78	4.99	1.11	0.16	2.28	3.75	4.51	0.96	2.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.53	0.54	0.73	0.79	0.20	0.48	0.65	0.71	0.39	0.58
d, Delay for Lane Group [s/veh]	26.44	15.53	15.62	28.44	16.37	11.75	26.16	27.20	27.94	22.57	24.62
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.71	2.87	2.68	1.94	4.83	0.81	0.95	1.64	1.93	1.15	1.55
50th-Percentile Queue Length [ft/ln]	17.81	71.79	67.05	48.50	120.75	20.17	23.80	40.95	48.36	28.77	38.83
95th-Percentile Queue Length [veh/ln]	1.28	5.17	4.83	3.49	8.43	1.45	1.71	2.95	3.48	2.07	2.80
95th-Percentile Queue Length [ft/ln]	32.05	129.23	120.69	87.30	210.86	36.31	42.84	73.72	87.05	51.79	69.89

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	26.44	15.56	15.62	28.44	16.37	11.75	26.16	27.20	27.20	27.94	22.57	24.62
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	16.46			17.33			26.81			25.37		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	18.95											
Intersection LOS	B											
Intersection V/C	0.679											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 63.9
 Level Of Service: F
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	666	9	3	1158	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	172	2	1	299	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	687	9	3	1195	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.06	0.00	0.01	0.10	0.00	0.02
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.03	0.00	0.00	57.47	63.40	14.95	40.10	63.94	13.01
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.07	0.04	0.00	0.01	0.01	0.00	0.22	0.22	0.22	0.39	0.39	0.39
95th-Percentile Queue Length [ft/ln]	1.87	0.93	0.00	0.25	0.13	0.00	5.54	5.54	5.54	9.71	9.71	9.71
d_A, Approach Delay [s/veh]	0.22			0.02			31.95			26.55		
Approach LOS	A			A			D			D		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	48.3
Analysis Method:	HCM 2010	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	Northbound		Southbound		Eastbound	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Northbound		Southbound		Eastbound	
Base Volume Input [veh/h]	0	649	1119	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	686	1168	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	181	307	2	2	5
Total Analysis Volume [veh/h]	19	722	1229	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.09	0.04
d_M, Delay for Movement [s/veh]	11.67	0.00	0.00	0.00	48.29	16.02
Movement LOS	B	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.10	0.05	0.00	0.00	0.45	0.45
95th-Percentile Queue Length [ft/ln]	2.49	1.25	0.00	0.00	11.35	11.35
d_A, Approach Delay [s/veh]	0.30		0.00		25.59	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.46					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)Control Type: Two-way stop
Analysis Method: HCM 2010
Analysis Period: 15 minutesDelay (sec / veh): 78.8
Level Of Service: F
Volume to Capacity (v/c): 0.000**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	677	5	9	1147	29	18	0	16	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	175	1	2	297	8	5	0	4	1	0	2
Total Analysis Volume [veh/h]	20	701	5	9	1187	30	19	0	17	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.28	0.00	0.04	0.04	0.00	0.01
d_M, Delay for Movement [s/veh]	11.56	0.00	0.00	9.10	0.00	0.00	72.30	78.80	27.22	41.69	67.65	11.42
Movement LOS	B	A	A	A	A	A	F	F	D	E	F	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.03	0.02	0.00	1.24	1.24	1.24	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	2.73	0.00	0.00	0.77	0.38	0.00	31.01	31.01	31.01	4.24	4.24	4.24
d_A, Approach Delay [s/veh]	0.32			0.07			51.01			20.73		
Approach LOS	A			A			F			C		
d_I, Intersection Delay [s/veh]	1.21											
Intersection LOS	F											

Intersection Level Of Service Report**Intersection 6: Chicago Ave (NS) at University Ave (EW)**

Control Type:

Signalized

Delay (sec / veh):

41.0

Analysis Method:

HCM 2010

Level Of Service:

D

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.733

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TWO			TWO			TWO			TWO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	7	2	7	6	6	7	6	5	2	8	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	242	433	151	192	918	95	207	743	351	226	363	68
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	62	110	39	49	234	24	53	190	90	58	93	17
Total Analysis Volume [veh/h]	247	442	154	196	937	97	211	758	358	231	370	69
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	17	56	0	15	54	0	16	42	42	17	43	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	119	119	119	119	119	119	119	119	119	119	119	119
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	22	50	50	9	37	37	10	30	57	11	30	30
g / C, Green / Cycle	0.19	0.41	0.41	0.08	0.31	0.31	0.08	0.25	0.48	0.09	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.07	0.12	0.10	0.06	0.28	0.28	0.06	0.21	0.23	0.07	0.10	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1802	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	638	1472	657	266	580	561	282	881	754	303	903	403
d1, Uniform Delay [s]	42.79	23.39	22.68	54.03	39.53	39.56	53.73	42.99	21.21	53.34	37.12	34.76
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	0.38	0.11	0.18	3.97	5.68	5.96	3.96	2.61	0.47	3.94	0.30	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.39	0.30	0.23	0.74	0.91	0.91	0.75	0.86	0.47	0.76	0.41	0.17
d, Delay for Lane Group [s/veh]	43.18	23.50	22.86	58.00	45.20	45.52	57.69	45.60	21.68	57.28	37.42	34.96
Lane Group LOS	D	C	C	E	D	D	E	D	C	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.19	4.08	2.78	2.98	15.19	14.78	3.23	10.85	6.70	3.53	4.51	1.58
50th-Percentile Queue Length [ft/ln]	79.70	102.08	69.41	74.56	379.67	369.52	80.75	271.13	167.53	88.20	112.63	39.57
95th-Percentile Queue Length [veh/ln]	5.74	7.35	5.00	5.37	21.58	21.09	5.81	16.25	10.95	6.35	7.99	2.85
95th-Percentile Queue Length [ft/ln]	143.46	183.74	124.94	134.21	539.45	527.15	145.35	406.15	273.67	158.77	199.66	71.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.18	23.50	22.86	58.00	45.34	45.52	57.69	45.60	21.68	57.28	37.42	34.96
Movement LOS	D	C	C	E	D	D	E	D	C	E	D	C
d_A, Approach Delay [s/veh]	29.15			47.38			41.07			44.01		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	40.99											
Intersection LOS	D											
Intersection V/C	0.733											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 7 Opening Year (2020) With Project Morning Peak
Hour - With Improvements

Report File: C:\...\AMOYWI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.070	23.1	C
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.020	14.5	B
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	22.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 23.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.070

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	986	74	6	487	2	7	0	13	14	0	14
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	269	20	2	133	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1078	81	7	532	2	8	0	14	15	0	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.02	0.00	0.02	0.07	0.00	0.03
d_M, Delay for Movement [s/veh]	8.51	0.00	0.00	11.09	0.00	0.00	15.54	21.04	10.22	23.14	20.65	13.75
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.03	0.02	0.00	0.13	0.13	0.13	0.33	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.22	0.00	0.00	0.76	0.38	0.00	3.27	3.27	3.27	8.32	8.32	8.32
d_A, Approach Delay [s/veh]	0.02			0.14			12.15			18.44		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.53											
Intersection LOS	C											

Intersection Level Of Service Report**Intersection 4: Chicago Ave (NS) at Project South Access (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 14.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.020

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	1053	499	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	277	131	2	2	7
Total Analysis Volume [veh/h]	21	1108	525	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	8.56	0.00	0.00	0.00	14.45	10.24
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.06	0.00	0.00	0.00	0.18	0.18
95th-Percentile Queue Length [ft/ln]	1.56	0.00	0.00	0.00	4.51	4.51
d_A, Approach Delay [s/veh]	0.16		0.00		11.21	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.34					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 22.2
 Level Of Service: C
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1039	1	4	499	21	31	0	17	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	269	0	1	129	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1077	1	4	517	22	32	0	18	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.09	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.54	0.00	0.00	10.64	0.00	0.00	16.02	20.60	10.90	22.17	19.57	12.43
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.02	0.01	0.00	0.38	0.38	0.38	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.66	0.00	0.00	0.47	0.23	0.00	9.49	9.49	9.49	0.46	0.46	0.46
d_A, Approach Delay [s/veh]	0.07			0.08			14.18			12.43		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.51											
Intersection LOS	C											

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 7 Opening Year (2020) With Project Evening Peak
Hour - With Improvements

Report File: C:\...\PMOYWI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.022	25.5	D
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.037	22.4	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.107	27.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 25.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.022

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	14	666	9	3	1158	8	4	0	6	11	0	11
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	172	2	1	299	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	14	687	9	3	1195	8	4	0	6	11	0	11
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00	0.02	0.00	0.01	0.04	0.00	0.02
d_M, Delay for Movement [s/veh]	11.41	0.00	0.00	9.03	0.00	0.00	25.46	22.39	13.55	17.98	23.19	11.04
Movement LOS	B	A	A	A	A	A	D	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.01	0.01	0.00	0.11	0.11	0.11	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	1.87	0.00	0.00	0.25	0.13	0.00	2.76	2.76	2.76	4.34	4.34	4.34
d_A, Approach Delay [s/veh]	0.22			0.02			18.31			14.51		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.35											
Intersection LOS	D											

Intersection Level Of Service Report**Intersection 4: Chicago Ave (NS) at Project South Access (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 22.4
 Level Of Service: C
 Volume to Capacity (v/c): 0.037

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	686	1168	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	181	307	2	2	5
Total Analysis Volume [veh/h]	19	722	1229	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.01	0.00	0.04	0.04
d_M, Delay for Movement [s/veh]	11.67	0.00	0.00	0.00	22.37	14.22
Movement LOS	B	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.00	0.26	0.26
95th-Percentile Queue Length [ft/ln]	2.64	0.00	0.00	0.00	6.50	6.50
d_A, Approach Delay [s/veh]	0.30		0.00		16.63	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 27.8
 Level Of Service: D
 Volume to Capacity (v/c): 0.107

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	19	677	5	9	1147	29	18	0	16	4	0	9
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	175	1	2	297	8	5	0	4	1	0	2
Total Analysis Volume [veh/h]	20	701	5	9	1187	30	19	0	17	4	0	9
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.11	0.00	0.04	0.01	0.00	0.01
d_M, Delay for Movement [s/veh]	11.56	0.00	0.00	9.10	0.00	0.00	27.82	24.82	15.48	18.43	24.08	10.81
Movement LOS	B	A	A	A	A	A	D	C	C	C	C	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.03	0.02	0.00	0.50	0.50	0.50	0.09	0.09	0.09
95th-Percentile Queue Length [ft/ln]	2.73	0.00	0.00	0.77	0.38	0.00	12.52	12.52	12.52	2.20	2.20	2.20
d_A, Approach Delay [s/veh]	0.32			0.07			21.99			13.15		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.64											
Intersection LOS	D											

Buildout Year (2025) Without Project

Apx - 190

Entrada Housing Development
Vistro File: C:\...\AME.vistro Scenario 8 Buildout Year (2025) Without Project Morning Peak Hour
Report File: C:\...\AM25WO.pdf 8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Left	0.839	31.5	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	57.2	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	52.7	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	EB Left	0.614	23.2	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)Control Type:
Analysis Method:
Analysis Period:Signalized
HCM 2010
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):31.5
C
0.839**Intersection Setup**

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	4	0	0	0	2	0	0	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	25	946	129	152	363	40	72	103	33	131	124	218
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	293	40	47	112	12	22	32	10	41	38	67
Total Analysis Volume [veh/h]	31	1171	160	188	449	50	89	127	41	162	153	270
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	65	0	21	72	0	12	25	0	19	32	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	92	92	92	92	92	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	37	37	12	45	45	6	14	10	18	18
g / C, Green / Cycle	0.04	0.41	0.41	0.13	0.49	0.49	0.07	0.15	0.11	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.02	0.36	0.37	0.11	0.13	0.03	0.05	0.09	0.09	0.08	0.17
s, saturation flow rate [veh/h]	1774	1863	1786	1774	3547	1583	1774	1786	1774	1863	1583
c, Capacity [veh/h]	74	759	727	229	1754	783	121	275	202	371	316
d1, Uniform Delay [s]	42.95	25.37	25.47	38.98	13.44	12.12	41.99	36.30	39.73	32.10	35.52
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.71	3.95	4.34	7.13	0.08	0.03	8.24	2.19	7.29	0.73	6.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.89	0.90	0.82	0.26	0.06	0.73	0.61	0.80	0.41	0.86
d, Delay for Lane Group [s/veh]	46.66	29.32	29.81	46.12	13.52	12.15	50.24	38.49	47.02	32.83	42.14
Lane Group LOS	D	C	C	D	B	B	D	D	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.74	13.37	13.02	4.42	2.47	0.50	2.25	3.67	3.96	3.04	6.36
50th-Percentile Queue Length [ft/ln]	18.55	334.17	325.45	110.52	61.84	12.51	56.35	91.82	99.07	75.88	158.99
95th-Percentile Queue Length [veh/ln]	1.34	19.36	18.94	7.87	4.45	0.90	4.06	6.61	7.13	5.46	10.50
95th-Percentile Queue Length [ft/ln]	33.38	484.07	473.38	196.72	111.32	22.52	101.43	165.28	178.32	136.58	262.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.66	29.53	29.81	46.12	13.52	12.15	50.24	38.49	38.49	47.02	32.83	42.14
Movement LOS	D	C	C	D	B	B	D	D	D	D	C	D
d_A, Approach Delay [s/veh]	29.95			22.34			42.55			41.06		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	31.51											
Intersection LOS	C											
Intersection V/C	0.839											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type:

Two-way stop

Delay (sec / veh):

57.2

Analysis Method:

HCM 2010

Level Of Service:

F

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1081	82	7	531	0	0	0	9	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	295	22	2	145	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1181	90	8	580	0	0	0	10	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.19	0.00	0.04
d_M, Delay for Movement [s/veh]	8.64	0.00	0.00	11.74	0.00	0.00	31.35	56.15	10.17	55.26	57.19	20.30
Movement LOS	A	A	A	B	A	A	D	F	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.04	0.02	0.00	0.04	0.04	0.04	0.83	0.83	0.83
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.98	0.49	0.00	1.08	1.08	1.08	20.70	20.70	20.70
d_A, Approach Delay [s/veh]	0.00			0.16			10.17			37.78		
Approach LOS	A			A			B			E		
d_I, Intersection Delay [s/veh]	0.74											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)Control Type: Two-way stop
Analysis Method: HCM 2010
Analysis Period: 15 minutesDelay (sec / veh): 52.7
Level Of Service: F
Volume to Capacity (v/c): 0.000**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1128	1	5	522	18	30	0	15	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	292	0	1	135	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1169	1	5	541	19	31	0	16	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.21	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.61	0.00	0.00	11.12	0.00	0.00	34.32	52.74	15.13	46.97	48.72	12.97
Movement LOS	A	A	A	B	A	A	D	F	C	E	E	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	0.86	0.86	0.86	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.68	0.00	0.00	0.64	0.32	0.00	21.45	21.45	21.45	0.50	0.50	0.50
d_A, Approach Delay [s/veh]	0.07			0.10			27.79			12.97		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	0.82											
Intersection LOS	F											

Intersection Level Of Service Report**Intersection 6: Chicago Ave (NS) at University Ave (EW)**Control Type:
Analysis Method:
Analysis Period:Signalized
HCM 2010
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):23.2
C
0.614**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	3/0/1			1/0/1			3/0/1			3/0/1		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	0	0	0	0	8	8	1	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	935	100	84	340	113	177	327	102	116	290	57
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	256	27	23	93	31	49	90	28	32	79	16
Total Analysis Volume [veh/h]	318	1025	110	92	373	124	194	359	112	127	318	63
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	9	23	23	6	20	20	7	9	23	6	9	9
g / C, Green / Cycle	0.14	0.35	0.35	0.09	0.31	0.31	0.11	0.14	0.36	0.10	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.09	0.29	0.07	0.03	0.14	0.14	0.06	0.10	0.07	0.04	0.09	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1707	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	476	1253	559	303	579	530	362	514	573	336	487	217
d1, Uniform Delay [s]	26.50	19.05	14.56	27.68	17.86	17.90	27.49	26.36	14.20	27.39	26.48	25.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	1.62	1.37	0.17	0.56	0.54	0.60	1.24	1.74	0.16	0.70	1.49	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.67	0.82	0.20	0.30	0.45	0.45	0.54	0.70	0.20	0.38	0.65	0.29
d, Delay for Lane Group [s/veh]	28.12	20.42	14.73	28.24	18.40	18.50	28.73	28.10	14.36	28.10	27.98	25.84
Lane Group LOS	C	C	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.23	6.21	1.00	0.64	2.79	2.60	1.39	2.57	1.03	0.90	2.26	0.86
50th-Percentile Queue Length [ft/ln]	55.81	155.13	25.12	15.98	69.74	65.08	34.82	64.22	25.82	22.39	56.58	21.41
95th-Percentile Queue Length [veh/ln]	4.02	10.29	1.81	1.15	5.02	4.69	2.51	4.62	1.86	1.61	4.07	1.54
95th-Percentile Queue Length [ft/ln]	100.46	257.27	45.22	28.77	125.53	117.15	62.68	115.60	46.47	40.30	101.84	38.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.12	20.42	14.73	28.24	18.43	18.50	28.73	28.10	14.36	28.10	27.98	25.84
Movement LOS	C	C	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	21.68			19.98			25.97			27.74		
Approach LOS	C			B			C			C		
d_I, Intersection Delay [s/veh]	23.21											
Intersection LOS	C											
Intersection V/C	0.614											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development
Vistro File: C:\...\PME.vistro Scenario 8 Buildout Year (2025) Without Project Evening Peak Hour
Report File: C:\...\PM25WO.pdf 8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Thru	0.717	20.3	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	79.2	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	97.6	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	NB Left	0.796	44.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 2: Chicago Ave (NS) at Linden St (EW)**

Control Type:

Signalized

Delay (sec / veh):

20.3

Analysis Method:

HCM 2010

Level Of Service:

C

Analysis Period:

15 minutes

Volume to Capacity (v/c):

0.717

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	T T T			T T T			T T			T T		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	5	2	0	0	2	0	0	2	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	60	520	152	159	1108	124	77	77	52	150	103	131
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	135	40	41	289	32	20	20	14	39	27	34
Total Analysis Volume [veh/h]	63	542	158	166	1154	129	80	80	54	156	107	136
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	62	0	23	73	0	22	22	0	23	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	60	60	60	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	5	21	21	7	24	24	5	6	7	8	8
g / C, Green / Cycle	0.08	0.36	0.36	0.12	0.40	0.40	0.09	0.10	0.12	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.20	0.09	0.33	0.08	0.05	0.08	0.09	0.06	0.09
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1739	1774	1863	1583
c, Capacity [veh/h]	135	664	613	218	1430	638	153	182	207	251	213
d1, Uniform Delay [s]	26.58	15.47	15.48	25.49	15.87	11.66	26.26	26.10	25.71	23.87	24.61
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.47	0.71	0.77	5.37	1.12	0.15	2.74	5.72	5.51	1.15	3.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.55	0.55	0.76	0.81	0.20	0.52	0.74	0.75	0.43	0.64
d, Delay for Lane Group [s/veh]	29.05	16.18	16.25	30.85	17.00	11.81	29.00	31.83	31.22	25.01	27.76
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.88	3.46	3.22	2.39	5.87	0.96	1.17	2.07	2.38	1.41	1.94
50th-Percentile Queue Length [ft/ln]	21.99	86.56	80.56	59.72	146.87	23.88	29.21	51.69	59.46	35.35	48.38
95th-Percentile Queue Length [veh/ln]	1.58	6.23	5.80	4.30	9.85	1.72	2.10	3.72	4.28	2.55	3.48
95th-Percentile Queue Length [ft/ln]	39.58	155.81	145.00	107.50	246.25	42.99	52.57	93.04	107.03	63.64	87.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.05	16.20	16.25	30.85	17.00	11.81	29.00	31.83	31.83	31.22	25.01	27.76
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.27			18.12			30.77			28.38		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	20.30											
Intersection LOS	C											
Intersection V/C	0.717											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 79.2
 Level Of Service: F
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	728	10	3	1272	1	0	0	5	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	188	3	1	328	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	6	751	10	3	1313	1	0	0	5	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.14	0.00	0.02
d_M, Delay for Movement [s/veh]	11.97	0.00	0.00	9.27	0.00	0.00	68.43	76.05	13.94	47.85	79.21	14.99
Movement LOS	B	A	A	A	A	A	F	F	B	E	F	B
95th-Percentile Queue Length [veh/ln]	0.03	0.02	0.00	0.01	0.01	0.00	0.04	0.04	0.04	0.56	0.56	0.56
95th-Percentile Queue Length [ft/ln]	0.87	0.44	0.00	0.27	0.13	0.00	0.93	0.93	0.93	13.88	13.88	13.88
d_A, Approach Delay [s/veh]	0.09			0.02			13.94			31.42		
Approach LOS	A			A			B			D		
d_I, Intersection Delay [s/veh]	0.47											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 97.6
 Level Of Service: F
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	723	6	10	1250	29	15	0	15	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	187	2	3	323	8	4	0	4	1	0	3
Total Analysis Volume [veh/h]	18	748	6	10	1294	30	16	0	16	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.30	0.00	0.04	0.06	0.00	0.02
d_M, Delay for Movement [s/veh]	12.21	0.00	0.00	9.28	0.00	0.00	89.53	97.55	31.60	49.02	83.78	12.24
Movement LOS	B	A	A	A	A	A	F	F	D	E	F	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.04	0.02	0.00	1.30	1.30	1.30	0.24	0.24	0.24
95th-Percentile Queue Length [ft/ln]	2.70	0.00	0.00	0.89	0.45	0.00	32.45	32.45	32.45	6.03	6.03	6.03
d_A, Approach Delay [s/veh]	0.28			0.07			60.56			24.50		
Approach LOS	A			A			F			C		
d_I, Intersection Delay [s/veh]	1.22											
Intersection LOS	F											

Intersection Level Of Service Report**Intersection 6: Chicago Ave (NS) at University Ave (EW)**Control Type:
Analysis Method:
Analysis Period:Signalized
HCM 2010
15 minutesDelay (sec / veh):
Level Of Service:
Volume to Capacity (v/c):44.7
D
0.796**Intersection Setup**

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	三三三			三三三			三三三			三三三		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	1	2	1	1	0	0	6	5	2	8	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	267	472	166	206	1010	99	221	821	388	249	400	64
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	120	42	53	258	25	56	209	99	64	102	16
Total Analysis Volume [veh/h]	272	482	169	210	1031	101	226	838	396	254	408	65
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	49	0	15	48	0	16	50	50	16	50	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	12	54	54	10	53	53	11	35	51	11	35	35
g / C, Green / Cycle	0.09	0.41	0.41	0.08	0.41	0.41	0.08	0.27	0.39	0.08	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.11	0.06	0.31	0.31	0.07	0.24	0.25	0.07	0.12	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1805	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	307	1468	655	264	755	732	281	947	626	294	960	428
d1, Uniform Delay [s]	58.74	25.92	25.07	59.20	33.32	33.39	58.85	45.87	31.81	58.90	39.19	36.17
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	8.48	0.60	0.95	5.40	7.08	7.41	5.34	2.99	1.06	7.54	0.30	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.89	0.33	0.26	0.80	0.76	0.76	0.80	0.88	0.63	0.86	0.43	0.15
d, Delay for Lane Group [s/veh]	67.22	26.52	26.02	64.60	40.40	40.80	64.20	48.86	32.87	66.44	39.49	36.33
Lane Group LOS	E	C	C	E	D	D	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.73	5.10	3.55	3.56	16.54	16.19	3.85	13.23	10.10	4.42	5.40	1.60
50th-Percentile Queue Length [ft/ln]	118.37	127.43	88.71	89.03	413.38	404.66	96.30	330.74	252.44	110.47	135.02	39.89
95th-Percentile Queue Length [veh/ln]	8.30	8.80	6.39	6.41	23.20	22.78	6.93	19.19	15.31	7.87	9.21	2.87
95th-Percentile Queue Length [ft/ln]	207.58	220.00	159.67	160.26	580.10	569.61	173.34	479.87	382.72	196.65	230.30	71.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.22	26.52	26.02	64.60	40.58	40.80	64.20	48.86	32.87	66.44	39.49	36.33
Movement LOS	E	C	C	E	D	D	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	38.42			44.35			46.89			48.63		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.65											
Intersection LOS	D											
Intersection V/C	0.796											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 10 Buildout Year (2025) Without Project Morning
Peak Hour - With Improvements

Report File: C:\...\AM25WOI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.085	26.0	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	24.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 26.0
 Level Of Service: D
 Volume to Capacity (v/c): 0.085

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1081	82	7	531	0	0	0	9	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	295	22	2	145	0	0	0	2	4	0	4
Total Analysis Volume [veh/h]	0	1181	90	8	580	0	0	0	10	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.09	0.00	0.04
d_M, Delay for Movement [s/veh]	8.64	0.00	0.00	11.74	0.00	0.00	16.21	22.82	10.17	26.03	22.70	14.85
Movement LOS	A	A	A	B	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.04	0.02	0.00	0.04	0.04	0.04	0.41	0.41	0.41
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.98	0.49	0.00	1.08	1.08	1.08	10.16	10.16	10.16
d_A, Approach Delay [s/veh]	0.00			0.16			10.17			20.44		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.45											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 24.5
 Level Of Service: C
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	9	1128	1	5	522	18	30	0	15	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	292	0	1	135	5	8	0	4	0	0	1
Total Analysis Volume [veh/h]	9	1169	1	5	541	19	31	0	16	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.09	0.00	0.02	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.61	0.00	0.00	11.12	0.00	0.00	16.76	22.21	11.06	24.51	21.01	12.97
Movement LOS	A	A	A	B	A	A	C	C	B	C	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	0.38	0.38	0.38	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.68	0.00	0.00	0.64	0.32	0.00	9.54	9.54	9.54	0.50	0.50	0.50
d_A, Approach Delay [s/veh]	0.07			0.10			14.82			12.97		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	0.48											
Intersection LOS	C											

Entrada Housing Development

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Scenario 10 Buildout Year (2025) Without Project Evening
Peak Hour - With Improvements

Report File: C:\...\PM25WOI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.000	28.6	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.106	31.5	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 28.6
 Level Of Service: D
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	728	10	3	1272	1	0	0	5	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	188	3	1	328	0	0	0	1	3	0	3
Total Analysis Volume [veh/h]	6	751	10	3	1313	1	0	0	5	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.05	0.00	0.02
d_M, Delay for Movement [s/veh]	11.97	0.00	0.00	9.27	0.00	0.00	28.63	24.15	13.94	19.07	25.08	11.50
Movement LOS	B	A	A	A	A	A	D	C	B	C	D	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.01	0.01	0.00	0.04	0.04	0.04	0.22	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.87	0.00	0.00	0.27	0.13	0.00	0.93	0.93	0.93	5.54	5.54	5.54
d_A, Approach Delay [s/veh]	0.09			0.02			13.94			15.29		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.27											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 31.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.106

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	0	2	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	723	6	10	1250	29	15	0	15	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	187	2	3	323	8	4	0	4	1	0	3
Total Analysis Volume [veh/h]	18	748	6	10	1294	30	16	0	16	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.01	0.01	0.00	0.11	0.00	0.04	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	12.21	0.00	0.00	9.28	0.00	0.00	31.47	27.17	16.42	19.60	26.52	11.09
Movement LOS	B	A	A	A	A	A	D	D	C	C	D	B
95th-Percentile Queue Length [veh/ln]	0.11	0.00	0.00	0.04	0.02	0.00	0.50	0.50	0.50	0.11	0.11	0.11
95th-Percentile Queue Length [ft/ln]	2.70	0.00	0.00	0.89	0.45	0.00	12.38	12.38	12.38	2.78	2.78	2.78
d_A, Approach Delay [s/veh]	0.28			0.07			23.94			13.93		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.60											
Intersection LOS	D											

Buildout Year (2025) With Project

Apx - 227

Entrada Housing Development
Vistro File: C:\...\AME.vistro Scenario 9 Buildout Year (2025) With Project Morning Peak Hour
Report File: C:\...\AM25W.pdf 8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.003	9.0	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Left	0.841	31.8	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	59.7	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.049	27.9	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	57.8	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	EB Left	0.621	23.5	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	Southbound		Eastbound		Westbound	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Southbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	0	39	24	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	2	1	4	4	1
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	2	1	49	32	1
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	0	13	8	0
Total Analysis Volume [veh/h]	3	2	1	52	34	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.97	8.49	7.29	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.39	0.39	0.05	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	8.78		0.14		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	31.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	22	821	112	129	316	35	63	88	29	114	107	186
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	11	2	4	4	0	0	2	1	1	1	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	955	131	152	367	40	72	103	34	132	124	218
Peak Hour Factor	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080	0.8080
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	295	41	47	114	12	22	32	11	41	38	67
Total Analysis Volume [veh/h]	32	1182	162	188	454	50	89	127	42	163	153	270
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	55	59	0	20	24	0	12	23	0	18	29	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	93	93	93	93	93	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	4	38	38	12	46	46	6	14	11	18	18
g / C, Green / Cycle	0.04	0.41	0.41	0.13	0.50	0.50	0.07	0.15	0.11	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.02	0.37	0.37	0.11	0.13	0.03	0.05	0.09	0.09	0.08	0.17
s, saturation flow rate [veh/h]	1774	1863	1785	1774	3547	1583	1774	1784	1774	1863	1583
c, Capacity [veh/h]	75	765	733	229	1763	787	120	273	202	371	315
d1, Uniform Delay [s]	43.42	25.52	25.63	39.47	13.49	12.14	42.55	36.88	40.20	32.51	35.97
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.75	3.95	4.36	7.20	0.08	0.03	8.56	2.30	7.34	0.73	6.69
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

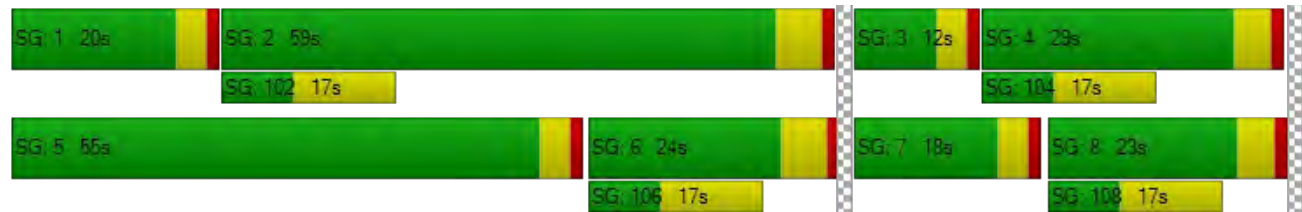
X, volume / capacity	0.42	0.89	0.90	0.82	0.26	0.06	0.74	0.62	0.81	0.41	0.86
d, Delay for Lane Group [s/veh]	47.17	29.48	29.99	46.67	13.56	12.18	51.11	39.17	47.53	33.24	42.66
Lane Group LOS	D	C	C	D	B	B	D	D	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.77	13.66	13.32	4.48	2.53	0.51	2.29	3.76	4.04	3.08	6.45
50th-Percentile Queue Length [ft/ln]	19.37	341.61	333.01	112.02	63.21	12.63	57.25	93.93	100.94	76.93	161.16
95th-Percentile Queue Length [veh/ln]	1.39	19.73	19.31	7.95	4.55	0.91	4.12	6.76	7.27	5.54	10.61
95th-Percentile Queue Length [ft/ln]	34.86	493.16	482.65	198.81	113.78	22.73	103.06	169.08	181.70	138.47	265.26

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.17	29.69	29.99	46.67	13.56	12.18	51.11	39.17	39.17	47.53	33.24	42.66
Movement LOS	D	C	C	D	B	B	D	D	D	D	C	D
d_A, Approach Delay [s/veh]	30.13			22.46			43.29			41.56		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	31.77											
Intersection LOS	C											
Intersection V/C	0.841											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	59.7
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1089	82	7	538	2	7	0	14	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	298	22	2	147	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1190	90	8	588	2	8	0	15	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.06	0.00	0.02	0.20	0.00	0.04
d_M, Delay for Movement [s/veh]	8.68	0.00	0.00	11.79	0.00	0.00	33.36	59.19	11.26	57.83	59.70	21.00
Movement LOS	A	A	A	B	A	A	D	F	B	F	F	C
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.04	0.02	0.00	0.27	0.27	0.27	0.87	0.87	0.87
95th-Percentile Queue Length [ft/ln]	0.23	0.11	0.00	0.99	0.49	0.00	6.63	6.63	6.63	21.63	21.63	21.63
d_A, Approach Delay [s/veh]	0.02			0.16			18.95			39.42		
Approach LOS	A			A			C			E		
d_I, Intersection Delay [s/veh]	0.94											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.049

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	1164	551	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	306	145	2	2	7
Total Analysis Volume [veh/h]	21	1225	580	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.05	0.04
d_M, Delay for Movement [s/veh]	8.74	0.00	0.00	0.00	27.91	10.95
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.06	0.03	0.00	0.00	0.28	0.28
95th-Percentile Queue Length [ft/ln]	1.56	0.78	0.00	0.00	7.12	7.12
d_A, Approach Delay [s/veh]	0.15		0.00		14.83	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.38					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 57.8
 Level Of Service: F
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	1147	1	5	549	22	34	0	18	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	297	0	1	142	6	9	0	5	0	0	1
Total Analysis Volume [veh/h]	10	1189	1	5	569	23	35	0	19	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.25	0.00	0.03	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.71	0.00	0.00	11.23	0.00	0.00	37.87	57.79	17.05	49.91	52.31	13.09
Movement LOS	A	A	A	B	A	A	E	F	C	E	F	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	1.09	1.09	1.09	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.77	0.00	0.00	0.65	0.32	0.00	27.22	27.22	27.22	0.51	0.51	0.51
d_A, Approach Delay [s/veh]	0.07			0.09			30.54			13.09		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	0.99											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.621

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TWO			TWO			TWO			TWO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	250	812	85	73	296	98	154	277	82	100	249	49
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	7	2	11	8	8	6	8	8	1	4	6
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	941	100	95	348	121	183	327	102	116	290	62
Peak Hour Factor	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120	0.9120
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	258	27	26	95	33	50	90	28	32	79	17
Total Analysis Volume [veh/h]	318	1032	110	104	382	133	201	359	112	127	318	68
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	26	73	0	12	59	0	19	31	31	14	26	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	9	23	23	6	21	21	7	9	23	6	9	9
g / C, Green / Cycle	0.14	0.35	0.35	0.09	0.32	0.32	0.10	0.14	0.36	0.10	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.09	0.29	0.07	0.03	0.14	0.15	0.06	0.10	0.07	0.04	0.09	0.04
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1701	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	475	1259	562	314	589	538	359	512	570	333	485	216
d1, Uniform Delay [s]	26.83	19.23	14.65	27.90	17.90	17.93	27.91	26.69	14.44	27.76	26.82	25.52
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	1.64	1.38	0.17	0.61	0.55	0.61	1.36	1.76	0.17	0.72	1.52	0.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

X, volume / capacity	0.67	0.82	0.20	0.33	0.45	0.46	0.56	0.70	0.20	0.38	0.66	0.31
d, Delay for Lane Group [s/veh]	28.48	20.61	14.82	28.51	18.45	18.55	29.27	28.45	14.61	28.47	28.34	26.34
Lane Group LOS	C	C	B	C	B	B	C	C	B	C	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.27	6.34	1.02	0.73	2.93	2.72	1.47	2.61	1.05	0.91	2.30	0.94
50th-Percentile Queue Length [ft/ln]	56.65	158.53	25.43	18.30	73.22	68.00	36.77	65.18	26.32	22.73	57.43	23.56
95th-Percentile Queue Length [veh/ln]	4.08	10.47	1.83	1.32	5.27	4.90	2.65	4.69	1.89	1.64	4.14	1.70
95th-Percentile Queue Length [ft/ln]	101.98	261.78	45.77	32.95	131.80	122.40	66.19	117.32	47.37	40.91	103.38	42.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.48	20.61	14.82	28.51	18.48	18.55	29.27	28.45	14.61	28.47	28.34	26.34
Movement LOS	C	C	B	C	B	B	C	C	B	C	C	C
d_A, Approach Delay [s/veh]	21.89			20.18			26.39			28.11		
Approach LOS	C			C			C			C		
d_I, Intersection Delay [s/veh]	23.47											
Intersection LOS	C											
Intersection V/C	0.621											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development
Vistro File: C:\...\PME.vistro
Report File: C:\...\PM25W.pdf
Scenario 9 Buildout Year (2025) With Project Evening Peak Hour
8/14/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Project Access (NS) at 7th St (EW)	Two-way stop	HCM 2010	SB Left	0.002	9.0	A
2	Chicago Ave (NS) at Linden St (EW)	Signalized	HCM 2010	EB Thru	0.721	20.5	C
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Thru	0.000	86.0	F
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.117	62.2	F
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Thru	0.000	115.1	F
6	Chicago Ave (NS) at University Ave (EW)	Signalized	HCM 2010	NB Left	0.800	44.7	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Project Access (NS) at 7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Southbound		Eastbound		Westbound	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Southbound		Eastbound		Westbound	
Base Volume Input [veh/h]	0	0	0	26	40	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	2	4	3	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1	2	34	49	3
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	9	13	1
Total Analysis Volume [veh/h]	2	1	2	36	52	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.99	8.56	7.33	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.24	0.24	0.10	0.10	0.00	0.00
d_A, Approach Delay [s/veh]	8.85		0.39		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.43					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 2: Chicago Ave (NS) at Linden St (EW)

Control Type:	Signalized	Delay (sec / veh):	20.5
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	52	450	132	134	962	108	67	65	45	130	88	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	8	2	5	11	0	0	2	1	2	2	5
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	526	154	159	1117	124	77	77	53	152	103	131
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	137	40	41	291	32	20	20	14	40	27	34
Total Analysis Volume [veh/h]	64	548	160	166	1164	129	80	80	55	158	107	136
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	0	130	130	0
Amber [s]	3.0	4.4	0.0	3.0	4.4	0.0	3.0	3.6	0.0	3.0	3.6	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	62	0	23	73	0	23	22	0	23	22	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	3.4	0.0	2.0	3.4	0.0	2.0	2.6	0.0	2.0	2.6	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	4.00	5.40	5.40	4.00	5.40	5.40	4.00	4.60	4.00	4.60	4.60
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	3.40	3.40	2.00	3.40	3.40	2.00	2.60	2.00	2.60	2.60
g_i, Effective Green Time [s]	5	22	22	7	25	25	5	6	7	8	8
g / C, Green / Cycle	0.08	0.36	0.36	0.12	0.41	0.41	0.09	0.10	0.12	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.20	0.09	0.33	0.08	0.05	0.08	0.09	0.06	0.09
s, saturation flow rate [veh/h]	1774	1863	1720	1774	3547	1583	1774	1738	1774	1863	1583
c, Capacity [veh/h]	136	669	618	218	1439	643	152	181	209	253	215
d1, Uniform Delay [s]	26.92	15.56	15.57	25.82	15.99	11.70	26.63	26.49	26.00	24.10	24.85
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.52	0.70	0.77	5.38	1.13	0.15	2.79	6.05	5.48	1.12	3.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.55	0.55	0.76	0.81	0.20	0.53	0.75	0.76	0.42	0.63
d, Delay for Lane Group [s/veh]	29.44	16.26	16.34	31.20	17.12	11.85	29.43	32.55	31.48	25.22	27.90
Lane Group LOS	C	B	B	C	B	B	C	C	C	C	C
Critical Lane Group	Yes	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.91	3.55	3.30	2.42	6.02	0.97	1.19	2.13	2.44	1.43	1.95
50th-Percentile Queue Length [ft/ln]	22.68	88.72	82.52	60.58	150.43	24.15	29.66	53.14	60.94	35.78	48.86
95th-Percentile Queue Length [veh/ln]	1.63	6.39	5.94	4.36	10.04	1.74	2.14	3.83	4.39	2.58	3.52
95th-Percentile Queue Length [ft/ln]	40.82	159.69	148.54	109.05	251.00	43.47	53.39	95.65	109.69	64.40	87.95

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.44	16.29	16.34	31.20	17.12	11.85	29.43	32.55	32.55	31.48	25.22	27.90
Movement LOS	C	B	B	C	B	B	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	17.39			18.25			31.38			28.59		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	20.47											
Intersection LOS	C											
Intersection V/C	0.721											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)

Control Type:	Two-way stop	Delay (sec / veh):	86.0
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	736	10	3	1280	8	4	0	7	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	190	3	1	330	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	15	760	10	3	1321	8	4	0	7	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.01	0.00	0.08	0.00	0.02	0.15	0.00	0.02
d_M, Delay for Movement [s/veh]	12.20	0.00	0.00	9.30	0.00	0.00	76.04	84.48	16.96	51.55	86.03	15.69
Movement LOS	B	A	A	A	A	A	F	F	C	F	F	C
95th-Percentile Queue Length [veh/ln]	0.09	0.04	0.00	0.01	0.01	0.00	0.30	0.30	0.30	0.60	0.60	0.60
95th-Percentile Queue Length [ft/ln]	2.25	1.12	0.00	0.27	0.13	0.00	7.50	7.50	7.50	14.97	14.97	14.97
d_A, Approach Delay [s/veh]	0.23			0.02			38.45			33.62		
Approach LOS	A			A			E			D		
d_I, Intersection Delay [s/veh]	0.70											
Intersection LOS	F											

Intersection Level Of Service Report

Intersection 4: Chicago Ave (NS) at Project South Access (EW)

Control Type:	Two-way stop	Delay (sec / veh):	62.2
Analysis Method:	HCM 2010	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.117

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	757	1291	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	199	340	2	2	5
Total Analysis Volume [veh/h]	19	797	1359	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.12	0.05
d_M, Delay for Movement [s/veh]	12.51	0.00	0.00	0.00	62.20	18.48
Movement LOS	B	A	A	A	F	C
95th-Percentile Queue Length [veh/ln]	0.11	0.06	0.00	0.00	0.58	0.58
95th-Percentile Queue Length [ft/ln]	2.81	1.40	0.00	0.00	14.41	14.41
d_A, Approach Delay [s/veh]	0.29		0.00		31.43	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)Control Type: Two-way stop
Analysis Method: HCM 2010
Analysis Period: 15 minutesDelay (sec / veh): 115.1
Level Of Service: F
Volume to Capacity (v/c): 0.000**Intersection Setup**

Name	Northbound			Southbound			Eastbound			Westbound		
Approach												
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	746	6	10	1267	32	19	0	17	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	193	2	3	328	8	5	0	4	1	0	3
Total Analysis Volume [veh/h]	21	772	6	10	1312	33	20	0	18	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.40	0.00	0.04	0.06	0.00	0.02
d_M, Delay for Movement [s/veh]	12.39	0.00	0.00	9.37	0.00	0.00	105.78	115.10	43.24	52.70	90.60	12.55
Movement LOS	B	A	A	A	A	A	F	F	E	F	F	B
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.04	0.02	0.00	1.82	1.82	1.82	0.26	0.26	0.26
95th-Percentile Queue Length [ft/ln]	3.23	0.00	0.00	0.91	0.45	0.00	45.39	45.39	45.39	6.47	6.47	6.47
d_A, Approach Delay [s/veh]	0.33			0.07			76.16			25.94		
Approach LOS	A			A			F			D		
d_I, Intersection Delay [s/veh]	1.65											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 6: Chicago Ave (NS) at University Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	44.7
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

Intersection Setup

Name	Northbound			Southbound			Eastbound			Westbound		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	TWO			TWO			TWO			TWO		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Northbound			Southbound			Eastbound			Westbound		
Base Volume Input [veh/h]	225	410	143	178	877	86	192	709	333	215	341	55
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	7	2	7	6	6	7	6	5	2	8	11
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	267	478	166	212	1015	105	228	821	388	249	400	74
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	122	42	54	259	27	58	209	99	64	102	19
Total Analysis Volume [veh/h]	272	488	169	216	1036	107	233	838	396	254	408	76
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	8	7	4	0
Auxiliary Signal Groups									5,8			
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	7	7	7	0
Maximum Green [s]	130	130	0	130	130	0	130	130	130	130	130	0
Amber [s]	3.5	4.4	0.0	4.0	4.4	0.0	4.0	4.1	4.1	4.0	4.1	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	0.0
Split [s]	16	24	0	42	50	0	41	48	48	16	23	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	7	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	10	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.5	3.4	0.0	3.0	3.4	0.0	3.0	3.1	3.1	3.0	3.1	0.0
Minimum Recall	No	No		No	No		No	No	No	No	No	
Maximum Recall	No	No		No	No		No	No	No	No	No	
Pedestrian Recall	No	No		No	No		No	No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering 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

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.50	5.40	5.40	5.00	5.40	5.40	5.00	5.10	4.50	5.00	5.10	5.10
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.50	3.40	3.40	3.00	3.40	3.40	3.00	3.10	0.00	3.00	3.10	3.10
g_i, Effective Green Time [s]	12	53	53	11	53	53	11	35	51	11	34	34
g / C, Green / Cycle	0.09	0.41	0.41	0.08	0.41	0.41	0.09	0.27	0.39	0.08	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.08	0.14	0.11	0.06	0.31	0.31	0.07	0.24	0.25	0.07	0.12	0.05
s, saturation flow rate [veh/h]	3445	3547	1583	3445	1863	1802	3445	3547	1583	3445	3547	1583
c, Capacity [veh/h]	306	1453	648	283	758	733	301	943	624	293	935	417
d1, Uniform Delay [s]	58.69	26.32	25.41	58.52	33.26	33.34	58.16	45.93	31.89	58.85	39.90	37.09
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering 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
d2, Incremental Delay [s]	8.70	0.63	0.98	4.27	7.23	7.61	4.26	3.09	1.08	7.74	0.32	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, 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
PF, progression 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

Lane Group Results

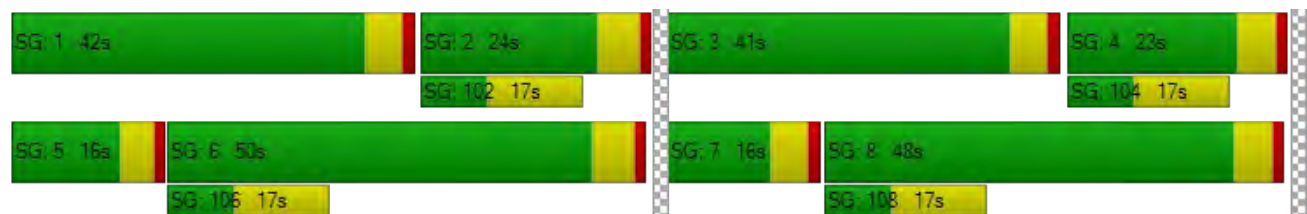
X, volume / capacity	0.89	0.34	0.26	0.76	0.76	0.77	0.77	0.89	0.63	0.87	0.44	0.18
d, Delay for Lane Group [s/veh]	67.39	26.94	26.38	62.79	40.49	40.94	62.42	49.02	32.97	66.59	40.22	37.29
Lane Group LOS	E	C	C	E	D	D	E	D	C	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.74	5.21	3.58	3.61	16.74	16.38	3.91	13.25	10.12	4.42	5.46	1.90
50th-Percentile Queue Length [ft/ln]	118.50	130.32	89.43	90.18	418.45	409.53	97.81	331.37	252.90	110.57	136.47	47.50
95th-Percentile Queue Length [veh/ln]	8.31	8.96	6.44	6.49	23.45	23.02	7.04	19.23	15.33	7.87	9.29	3.42
95th-Percentile Queue Length [ft/ln]	207.77	223.93	160.97	162.32	586.18	575.47	176.06	480.64	383.30	196.80	232.26	85.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	67.39	26.94	26.38	62.79	40.69	40.94	62.42	49.02	32.97	66.59	40.22	37.29
Movement LOS	E	C	C	E	D	D	E	D	C	E	D	D
d_A, Approach Delay [s/veh]	38.68			44.22			46.82			48.99		
Approach LOS	D			D			D			D		
d_I, Intersection Delay [s/veh]	44.71											
Intersection LOS	D											
Intersection V/C	0.800											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Entrada Housing Development

Vistro File: C:\...\AME.vistro

Scenario 11 Buildout Year (2025) With Project Morning Peak
Hour - With Improvements

Report File: C:\...\AM25WI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	WB Left	0.087	26.6	D
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.022	15.3	C
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	WB Left	0.000	25.2	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 26.6
 Level Of Service: D
 Volume to Capacity (v/c): 0.087

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	938	71	6	462	0	0	0	8	13	0	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	10	0	0	7	2	7	0	5	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1089	82	7	538	2	7	0	14	15	0	15
Peak Hour Factor	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150	0.9150
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	298	22	2	147	1	2	0	4	4	0	4
Total Analysis Volume [veh/h]	3	1190	90	8	588	2	8	0	15	16	0	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.01	0.01	0.00	0.03	0.00	0.02	0.09	0.00	0.04
d_M, Delay for Movement [s/veh]	8.68	0.00	0.00	11.79	0.00	0.00	16.68	23.46	10.48	26.59	23.11	14.98
Movement LOS	A	A	A	B	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.01	0.00	0.00	0.04	0.02	0.00	0.15	0.15	0.15	0.42	0.42	0.42
95th-Percentile Queue Length [ft/ln]	0.23	0.00	0.00	0.99	0.49	0.00	3.65	3.65	3.65	10.38	10.38	10.38
d_A, Approach Delay [s/veh]	0.02			0.16			12.64			20.79		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	0.56											
Intersection LOS	D											

Intersection Level Of Service Report**Intersection 4: Chicago Ave (NS) at Project South Access (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 15.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.022

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	1008	475	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	5	5	7	8	26
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	1164	551	7	8	26
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	306	145	2	2	7
Total Analysis Volume [veh/h]	21	1225	580	7	8	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.01	0.00	0.02	0.04
d_M, Delay for Movement [s/veh]	8.74	0.00	0.00	0.00	15.28	10.49
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.07	0.00	0.00	0.00	0.19	0.19
95th-Percentile Queue Length [ft/ln]	1.63	0.00	0.00	0.00	4.79	4.79
d_A, Approach Delay [s/veh]	0.15		0.00		11.59	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.32					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 25.2
 Level Of Service: D
 Volume to Capacity (v/c): 0.000

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	8	979	1	4	454	16	26	0	13	0	0	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	21	0	0	27	4	4	0	3	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	1147	1	5	549	22	34	0	18	0	0	3
Peak Hour Factor	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650	0.9650
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	297	0	1	142	6	9	0	5	0	0	1
Total Analysis Volume [veh/h]	10	1189	1	5	569	23	35	0	19	0	0	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.01	0.00	0.01	0.01	0.00	0.11	0.00	0.03	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	8.71	0.00	0.00	11.23	0.00	0.00	17.37	22.96	11.42	25.18	21.52	13.09
Movement LOS	A	A	A	B	A	A	C	C	B	D	C	B
95th-Percentile Queue Length [veh/ln]	0.03	0.00	0.00	0.03	0.01	0.00	0.46	0.46	0.46	0.02	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.77	0.00	0.00	0.65	0.32	0.00	11.45	11.45	11.45	0.51	0.51	0.51
d_A, Approach Delay [s/veh]	0.07			0.09			15.28			13.09		
Approach LOS	A			A			C			B		
d_I, Intersection Delay [s/veh]	0.54											
Intersection LOS	D											

Entrada Housing Development

Vistro File: C:\...\PME.vistro

Scenario 11 Buildout Year (2025) With Project Evening Peak
Hour - With Improvements

Report File: C:\...\PM25WI.pdf

8/15/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
3	Chicago Ave (NS) at Project North Access/7th St (EW)	Two-way stop	HCM 2010	EB Left	0.027	29.5	D
4	Chicago Ave (NS) at Project South Access (EW)	Two-way stop	HCM 2010	EB Left	0.043	25.4	D
5	Chicago Ave (NS) at 7th St (EW)	Two-way stop	HCM 2010	EB Left	0.136	33.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report**Intersection 3: Chicago Ave (NS) at Project North Access/7th St (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 29.5
 Level Of Service: D
 Volume to Capacity (v/c): 0.027

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	5	631	9	3	1104	1	0	0	4	11	0	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	10	0	0	10	7	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	736	10	3	1280	8	4	0	7	13	0	13
Peak Hour Factor	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690	0.9690
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	190	3	1	330	2	1	0	2	3	0	3
Total Analysis Volume [veh/h]	15	760	10	3	1321	8	4	0	7	13	0	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.01	0.00	0.00	0.01	0.00	0.03	0.00	0.02	0.05	0.00	0.02
d_M, Delay for Movement [s/veh]	12.20	0.00	0.00	9.30	0.00	0.00	29.53	25.09	14.54	19.80	26.31	11.59
Movement LOS	B	A	A	A	A	A	D	D	B	C	D	B
95th-Percentile Queue Length [veh/ln]	0.09	0.00	0.00	0.01	0.01	0.00	0.14	0.14	0.14	0.23	0.23	0.23
95th-Percentile Queue Length [ft/ln]	2.25	0.00	0.00	0.27	0.13	0.00	3.42	3.42	3.42	5.76	5.76	5.76
d_A, Approach Delay [s/veh]	0.23			0.02			19.99			15.70		
Approach LOS	A			A			C			C		
d_I, Intersection Delay [s/veh]	0.39											
Intersection LOS	D											

Intersection Level Of Service Report**Intersection 4: Chicago Ave (NS) at Project South Access (EW)**

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 25.4
 Level Of Service: D
 Volume to Capacity (v/c): 0.043

Intersection Setup

Name						
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00		40.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	649	1119	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	11	4	8	8	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	757	1291	8	8	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	199	340	2	2	5
Total Analysis Volume [veh/h]	19	797	1359	8	8	19
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			Yes
Number of Storage Spaces in Median	0	0	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.01	0.00	0.04	0.05
d_M, Delay for Movement [s/veh]	12.51	0.00	0.00	0.00	25.45	15.35
Movement LOS	B	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.12	0.00	0.00	0.00	0.30	0.30
95th-Percentile Queue Length [ft/ln]	2.97	0.00	0.00	0.00	7.44	7.44
d_A, Approach Delay [s/veh]	0.29		0.00		18.34	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.33					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 5: Chicago Ave (NS) at 7th St (EW)

Control Type: Two-way stop
 Analysis Method: HCM 2010
 Analysis Period: 15 minutes

Delay (sec / veh): 33.1
 Level Of Service: D
 Volume to Capacity (v/c): 0.136

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	40.00			40.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	15	627	5	9	1085	25	13	0	13	4	0	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	25	0	0	19	3	4	0	2	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	746	6	10	1267	32	19	0	17	5	0	10
Peak Hour Factor	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660	0.9660
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	193	2	3	328	8	5	0	4	1	0	3
Total Analysis Volume [veh/h]	21	772	6	10	1312	33	20	0	18	5	0	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			Yes	Yes
Number of Storage Spaces in Median	0	0	2	2

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.01	0.00	0.01	0.01	0.00	0.14	0.00	0.04	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	12.39	0.00	0.00	9.37	0.00	0.00	33.11	28.71	17.52	20.26	27.49	11.22
Movement LOS	B	A	A	A	A	A	D	D	C	C	D	B
95th-Percentile Queue Length [veh/ln]	0.13	0.00	0.00	0.04	0.02	0.00	0.64	0.64	0.64	0.12	0.12	0.12
95th-Percentile Queue Length [ft/ln]	3.23	0.00	0.00	0.91	0.45	0.00	15.97	15.97	15.97	2.88	2.88	2.88
d_A, Approach Delay [s/veh]	0.33			0.07			25.73			14.23		
Approach LOS	A			A			D			B		
d_I, Intersection Delay [s/veh]	0.70											
Intersection LOS	D											



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