

APPENDIX O
TRAFFIC IMPACT REPORT



**Traffic Impact Study for
Housing Authority of the City of Los Angeles
Rose Hill Courts Project**

August 20, 2019

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Executive Summary

This traffic study was prepared for UltraSystems Environmental and the Housing Authority of the City of Los Angeles by KOA for the proposed redevelopment of the Rose Hill Courts Housing Complex. The project is located at 4446 Florizel Street, within the El Sereno community of the City of Los Angeles.

The following text summarizes the traffic study results and conclusions:

Project Details

- The project would involve demolition of the existing 100-unit housing complex and the construction of 185 housing units (183 affordable housing units and 2 manager's units) in its place.
- Driveway access to the proposed Project would be provided on all of the site frontages.
- Parking would be provided on-site with a total of 177 off-street parking stalls.
- The final phase of the proposed Project is anticipated to be completed by the year 2025.
- The project would generate 354 net daily trips, including 43 vehicle trips during the a.m. peak hour (17 inbound and 26 outbound trips) and 29 vehicle trips during the p.m. peak hour (16 inbound and 13 outbound trips).

Impact Analysis

- Under existing conditions, the three study intersections defined for analysis through a Memorandum of Understanding (MOU) with the City of Los Angeles Department of Transportation (LADOT) are operating at Level of Service (LOS) D or better during both the a.m. and p.m. peak hours.
- The proposed buildout and operational year is 2025, and a one-percent annual ambient growth rate was applied to the future baseline scenario. A total of seven area projects were identified within the study area, and included in the traffic impact analysis.
- Under existing plus-Project conditions, all of the study intersections would continue to operate at LOS D or better during both a.m. and p.m. peak hours.
- Under future post-Project conditions, all of the study intersections would continue to operate at LOS D or better during both a.m. and p.m. peak hours.
- The proposed Project would not create a significant impact at any of the study intersections under existing plus-Project conditions or future post-Project conditions. Therefore, no mitigation measures are necessary.

Neighborhood Operations Analysis:

- Four intersections at the perimeter of the Project site and on the route to and from the site and the closest arterial were examined under a neighborhood roadway operations analysis.
- As the vehicle delay at these intersections does not reach LOS E or F in the future without-Project or future with-Project periods, additional signal warrant analysis was not conducted.

Potential Construction Period Impacts:

- Construction operations for the proposed Project could create significant impact during peak periods at the study intersections.
- It is recommended that the construction manager schedules truck traffic and employee shifts to avoid creating trips during the peak traffic periods, as is feasible for construction operations. All measures including identified truck routes and designated employee parking areas should be detailed within a Construction Management Plan to be reviewed and approved by LADOT before the start of construction. These measures would reduce construction impacts on the area roadway network.

Vehicles Miles Traveled (VMT)

- On August 9, 2019, LADOT issued guidance on the implementation of the state mandated analysis of vehicles miles travelled:

On July 30, 2019, the City of Los Angeles adopted vehicle miles traveled (VMT) as a criteria in determining transportation impacts under the State's California Environmental Quality Act (CEQA). This adoption was required by Senate Bill (SB) 743 and the recent changes to Section 15064.3 of the CEQA Guidelines. To manage this transition LADOT will honor executed MOUs for traffic studies that were processed under the prior LOS-based guidelines; however, we strongly recommend that these projects also evaluate VMT as part of their transportation analysis. The VMT analysis will help guarantee the project discloses the appropriate information as required by CEQA in the event that the project does not receive their entitlements prior to July 1, 2020, which is the State's official deadline for required compliance by all projects.

- It is anticipated that the Proposed Project will receive its entitlements prior to July 1, 2020 so a full VMT analysis is not provided in the "NAME OF TRAFFIC STUDY/APPENDIX] or this Draft EIR

1. Introduction

KOA Corporation has been retained by UltraSystems Environmental to analyze the potential traffic impacts associated with the proposed Project. The traffic study was conducted based on the traffic study guidelines of the City of Los Angeles Department of Transportation (LADOT).

Prior to the start of the study, KOA Corporation coordinated with staff from LADOT to obtain consensus on the traffic scope, methodology and assumptions. A Memorandum of Understanding (MOU) was prepared and reviewed by LADOT staff. A copy of the executed MOU is provided in Appendix A.

1.1 PROJECT DESCRIPTION

The Rose Hills Courts Housing Complex is located at 4446 Florizel Street, on a parcel situated between Boundary Avenue (on the west) and McKenzie Avenue (on the east). The Project will involve redeveloping the 100-unit complex into a complex with 185 housing units (183 affordable housing units and 2 manager's units).

Driveway access would be located on McKenzie Avenue at the east side of the property, on Florizel Street at the north side of the property and on Mercury Avenue at the south side of the property. A total of 177 off-street parking stalls would be provided on the site. The Project is anticipated to be completed in two phases, with the final date of completion to be in the year 2025.

The proposed Project site plan is illustrated on Figure 1.

1.2 PROJECT STUDY AREA

The Project study area, as defined through consultation with LADOT, includes three study intersections:

1. Topaz Street & Huntington Drive
2. Monterey Road & Huntington Drive
3. Monterey Road & Huntington Drive (N)/Browne Avenue

At an additional four local neighborhood intersections, operations were examined to provide an analysis of neighborhood roadway effects:

4. McKenzie Avenue & Victorine Street/Browne Avenue
5. Boundary Avenue & Mercury Avenue
6. McKenzie Avenue/Galena Street & Mercury Avenue
7. Huntington Drive (N) & Mercury Avenue

Figure 2 illustrates the Project site and the locations of all of the study intersections.

FIGURE 1

ROSE HILL COURTS Project Site Plan



RELATED
PROJECTS

ROSE HILL COURTS, LOS ANGELES

WITHE MALCOLM
ARCHITECTS

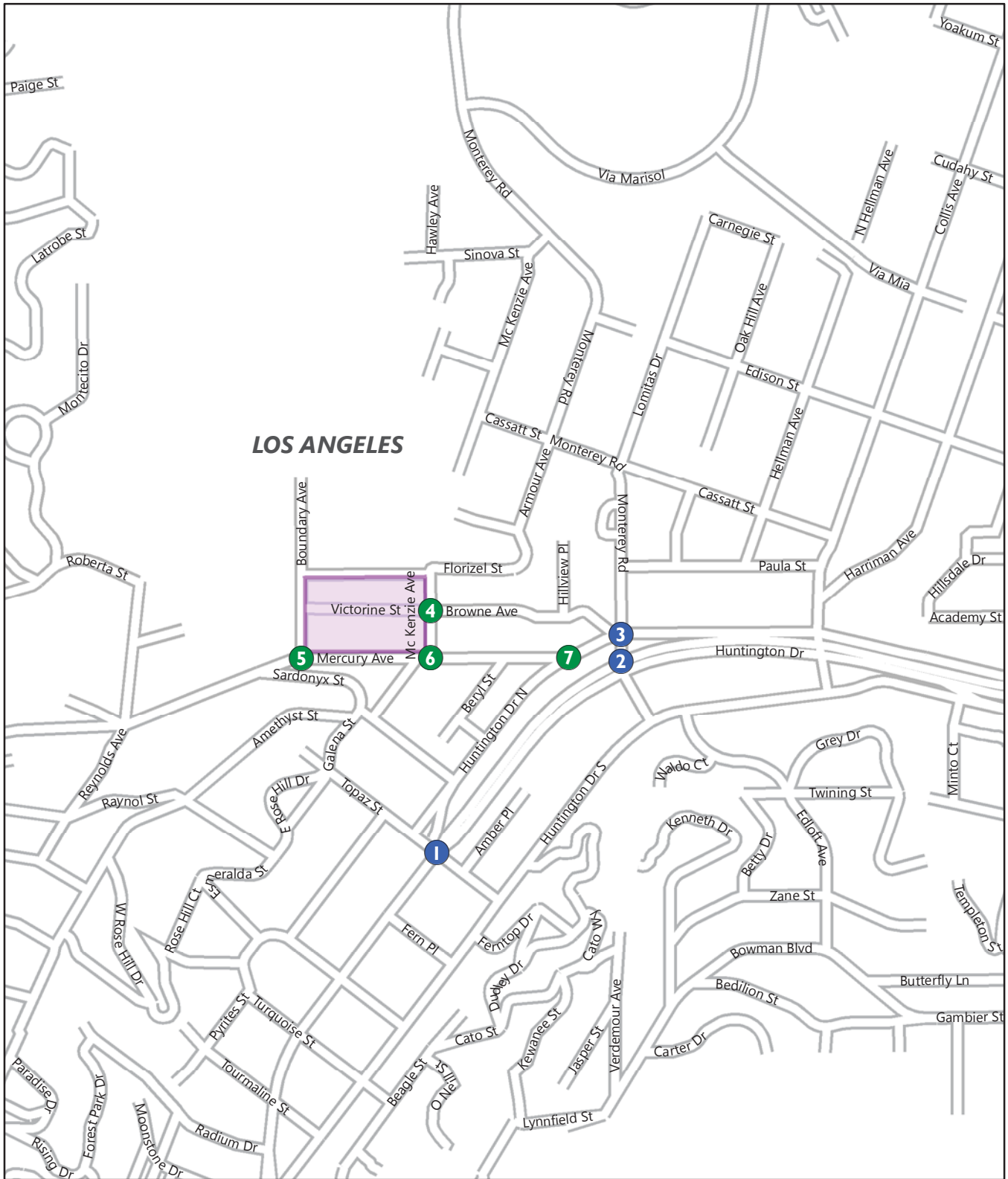


FIGURE 2

ROSE HILL COURTS

4446 FLORIZELL STREET

Related Project Locations



 Project Site  Study Intersections per MOU  Individual Neighborhood Intersections 

1.3 STUDY SCENARIOS

Traffic impacts associated with the proposed Project were analyzed at the study intersections for the weekday a.m. and p.m. peak-hour periods. The study included the analysis of the following traffic scenarios:

- Existing Conditions
- Existing with-Project Conditions
- Future pre-Project Conditions
- Future post-Project Conditions

1.4 ANALYSIS METHODOLOGY

The proposed Project site is located within the City of Los Angeles. KOA coordinated with LADOT at the start of this study to achieve consensus on assumptions such as study locations, trip generation, and trip distribution.

The general methodology and assumptions contained in this report are based on the LADOT *Traffic Study Policies and Procedures* document of December 2016. A Memorandum of Understanding (MOU) that included all major traffic study assumptions was submitted to LADOT. The Project MOU was executed on June 27, 2018 by LADOT.

The following text describes the methodology for this report as defined in the MOU document.

Existing Conditions

Fieldwork within the project study area was undertaken to identify conditions at key study area roadways, identify traffic control and approach lane configuration at each study intersection, and identify the locations of on-street parking and transit stops.

Traffic counts were collected at the study intersections during the timeframes of 7:00 a.m. to 10:00 a.m. and 3:00 p.m. to 6:00 p.m. on Tuesday, May 15, 2018. These counts were utilized to define existing volumes for the weekday a.m. and p.m. peak-hour level of service calculations.

The traffic count summaries are provided in Attachment B of this report. The existing levels of service at the study intersections are discussed in Section 2 of this report.

Project Trip Generation and Distribution

Project trip generation rates for the affordable housing units were derived from LADOT's Affordable Housing guidelines. The two on-site manager's units used trip rates defined by the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition*. The latter rates (which are typically used in traffic analyses of multi-family housing) are slightly lower than the LADOT affordable housing rates in the AM peak period but considerably higher in the PM peak period.

The detailed methodology utilized for the Project trip generation and distribution calculations is discussed in Section 3 of this report.

Existing with-Project Conditions

Based on the traffic that is projected for the proposed Project and the traffic count totals, an Existing with-Proposed Project conditions scenario was analyzed. The levels of service for existing with-Project conditions at the study intersections are discussed in Section 4 of this report.

Future without-Project Conditions

Typically, regional traffic growth that would affect operations at the study intersections by the anticipated project opening year is added to the study area roadways by applying an ambient/background traffic growth rate to the existing traffic volumes. The full operation of the proposed Project is anticipated to occur by the year 2025. Therefore, an annual traffic growth rate of 1% per year was assumed for the analysis of future baseline conditions.

In addition, traffic from area/cumulative projects (approved and pending developments) was included as part of the analysis for future-year 2025 conditions. KOA obtained information from LADOT pertaining to projects that would add measurable volumes to the study intersections.

The levels of service for the future without-Project conditions scenario are discussed in Section 5 of this report.

Future with-Project Condition

Based on the future traffic volumes including traffic from ambient growth, area/cumulative projects and the proposed project, the future with-Project conditions were determined and analyzed. The levels of service for the future with-Project conditions scenario are discussed in Section 6 of this report.

Level of Service Methodology – Signalized Intersections under MOU

A signalized intersection Level of Service (LOS) analysis was conducted, for those locations included in the approved LADOT MOU. LADOT has designated the Circular 212 Planning methodology as the desired tool for the analyzed of signalized intersections. The concept of roadway level of service under the Circular 212 method is calculated as the volume of vehicles that pass through the facility divided by the capacity of that facility. A facility is “at capacity” (V/C of 1.00 or greater) when extreme congestion occurs. This volume/capacity ratio value is a function of hourly volumes, signal phasing, and approach lane configuration on each leg of the intersection.

LOS values range from LOS A to LOS F. LOS A indicates excellent operating conditions with little

delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay. LOS E is typically defined as the operating "capacity" of a roadway.

Level of Service Methodology – Neighborhood Unsignalized Intersections

For the stop-controlled neighborhood intersections, LOS was analyzed based on the Highway Capacity Manual (HCM) unsignalized intersection methodology. This method calculates roadway level of service based on intersection delay, defined as the worst-case approach delay experienced by users of the intersection who must stop or yield to free-flow through traffic. The method uses a "gap acceptance" technique to predict driver delay.

As with the Circular 2012 methodology, the HCM LOS values range from A to F, with LOS A indicating excellent operating conditions and LOS F representing congested conditions with excessive vehicle delay. LOS "E" is typically defined as the operating "capacity" of a roadway.

Overall LOS Definitions

Table 1 defines the level of service criteria applied to the study intersections.

Table 1- Level of Service Definitions

Level of Service	Volume-to-Capacity Definition	Signalized Volume to Capacity Ratio	Unsignalized Delay per Vehicle (seconds)
A	Excellent operation. Free-flow speeds prevail. Vehicles are almost unimpeded in their ability to maneuver within the traffic stream.	0.00-0.600	< 10
B	Very good operation. Reasonably free-flow speeds are maintained. The ability to maneuver within traffic is only slightly restricted.	0.601-0.700	> 10 and < 15
C	Good operation. Flow with speeds at or near free-flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more care and vigilance on the part of the driver.	0.701-0.800	> 15 and < 25
D	Fair operation. Speeds begin to decline slightly with increasing flows. In this range, density begins to increase somewhat more quickly with increasing flow. Freedom to maneuver within the traffic stream is noticeably limited.	0.801-0.900	> 25 and < 35
E	Poor operation. Operation at capacity with no usable gaps in the traffic stream. Any disruption to the traffic stream has little or no room to dissipate.	0.901-1.000	> 35 and < 50
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movements of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Over 1.000	> 50

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington D.C., 2000 and Interim Materials on Highway Capacity, NCHRP Circular 2012, 1982

Vehicles Miles Traveled (VMT)

- On August 9, 2019, LADOT issued guidance on the implementation of the state mandated analysis of vehicles miles travelled:

On July 30, 2019, the City of Los Angeles adopted vehicle miles traveled (VMT) as a criteria in determining transportation impacts under the State's California Environmental Quality Act (CEQA). This adoption was required by Senate Bill (SB) 743 and the recent changes to Section 15064.3 of the CEQA Guidelines. To manage this transition LADOT will honor executed MOUs for traffic studies that were processed under the prior LOS-based guidelines; however, we strongly recommend that these projects also evaluate VMT as part of their transportation analysis. The VMT analysis will help guarantee the project discloses the appropriate information as required by CEQA in the event that the project does not receive their entitlements prior to July 1, 2020, which is the State's official deadline for required compliance by all projects.

- It is anticipated that the Proposed Project will receive its entitlements prior to July 1, 2020 so a full VMT analysis is not provided in the "NAME OF TRAFFIC STUDY/APPENDIX] or this Draft EIR

Significant Traffic Impacts

As defined by the LADOT traffic study guidelines, significant impacts of a proposed project on a facility must be mitigated to a level of insignificance, where feasible. Potential significant traffic impacts at the study intersections due to the proposed Project are discussed in Section 7 of this report.

2. Existing Conditions

This section describes the existing conditions within the study area in terms of roadway facilities, transit service and traffic operating conditions.

2.1 EXISTING ROADWAY SYSTEM

The key roadways within the study area are described below. The discussion presented here is limited to specific roadways that traverse the study intersections and serve the Project site. Classifications are based on the City of Los Angeles General Plan Mobility Element.

Browne Avenue is classified as a Local Street. This roadway provides one travel lane in each direction. On-street parking is permitted on both sides of the roadway from Monterey Road to a point 200 feet west of Hillview Place. West of the latter location, on-street parking is only permitted on the north side of the road. The posted speed limit is 25 miles per hour.

Mercury Avenue is classified as a Collector. This roadway provides one travel lane in each direction. On-street parking is generally permitted on both sides of the roadway. The posted speed limit ranges from 25 to 30 miles per hour.

Huntington Drive North is classified as a Boulevard II (east of Monterey Road), a Collector (from Monterey Road to Mercury Avenue) and a Local Street (west of Mercury Avenue). This roadway provides one travel lane in each direction. On-street parking is generally prohibited on both sides of the roadway in the study area. The posted speed limit is 30 miles per hour.

Huntington Drive is classified as a Boulevard II. This roadway provides three travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 35 miles per hour.

Topaz Street is classified as a Local Street. This roadway provides one travel lane in each direction. On-street parking is generally permitted on both sides of the roadway with restrictions. The posted speed limit is 25 miles per hour.

Boundary Avenue is classified as a Local Street. This roadway provides one travel lane in each direction. On-street parking is generally permitted on the west side of the roadway and prohibited on the east side. The posted speed limit is 25 miles per hour.

McKenzie Avenue is classified as a Local Street. This roadway provides one travel lane in each direction. On-street parking is generally permitted on both sides of the roadway. The posted speed limit is 25 miles per hour.

Monterey Road is classified as an Avenue II. This roadway provides one to two travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway south of Huntington Drive North and permitted on both sides of the roadway north of Huntington Drive North. The posted speed limit is 35 miles per hour. The street has a Class III bicycle route.

2.2 EXISTING TRANSIT SERVICE

The roadway network in the vicinity of the proposed Project site is served by the Los Angeles County Metropolitan Transportation Authority (Metro). Table 2 provides a description of the public transit lines that operate within the study area.

Table 2 - Existing Transit Service Summary

Agency	Line	From	To	Via	Peak Frequency
Metro	78	Downtown LA	South Arcadia	Huntington Drive, Main Street, Las Tunas Drive	10 minutes
Metro	79	Downtown LA	Arcadia	Huntington Drive	10 minutes
Metro	378	Downtown LA	South Arcadia	Huntington Drive, Main Street, Las Tunas Drive	11 minutes
Metro	252	Lynwood	Montecito Heights	California Avenue, State Street, Pacific Boulevard, Soto Street, Huntington Drive, Huntington Drive North, Mercury Avenue, Griffin Avenue	15 minutes
Metro	256	Commerce	Altadena	Eastern Avenue, Monterey Road, Avenue 64	40 minutes

2.3 EXISTING TRAFFIC VOLUMES

Vehicle turning movement counts were collected at the study intersections on Tuesday, May 15, 2018 from 7:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 6:00 p.m. The traffic count data sheets are provided in Appendix B.

2.3 EXISTING INTERSECTION LEVELS OF SERVICE

The intersection analysis was based on the lane configuration depicted on Figure 3. The volume-to-capacity ratio or intersection delay (depending on whether or not the intersection was signalized) and corresponding level of service (LOS) were determined for each of the study intersections during the weekday a.m. and p.m. peak hours.

Table 3 summarizes the volume-to-capacity ratios, intersection delay figures and LOS values for existing traffic conditions.

**Table 3- Intersection Performance –
Existing Conditions**

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Topaz Street & Huntington Drive	0.647	B	0.466	A
2	Monterey Rd & Huntington Drive	0.845	D	0.708	C
3	Monterey Rd & Huntington Drive North/Browne Avenue	0.464	A	0.659	B

LOS = Level of Service; V/C = Volume-to-Capacity ratio

All of the study intersections are currently operating at LOS D or better during both a.m. and p.m. peak hours. Operations at the analyzed neighborhood intersections are discussed within Section 7 of this report.

Figure 3 illustrates the existing traffic controls and approach lane configurations at the study intersections. Figure 4 illustrates the existing a.m. and p.m. peak-hour vehicle turning movement volumes at all of the study intersections.

The LADOT Critical Movement Analysis (CMA) calculation worksheets and output from the Highway Capacity Manual analysis (conducted in Vistro software) are provided in Appendix C of this report.

FIGURE 3

ROSE HILL COURTS

Existing Lane Configuration

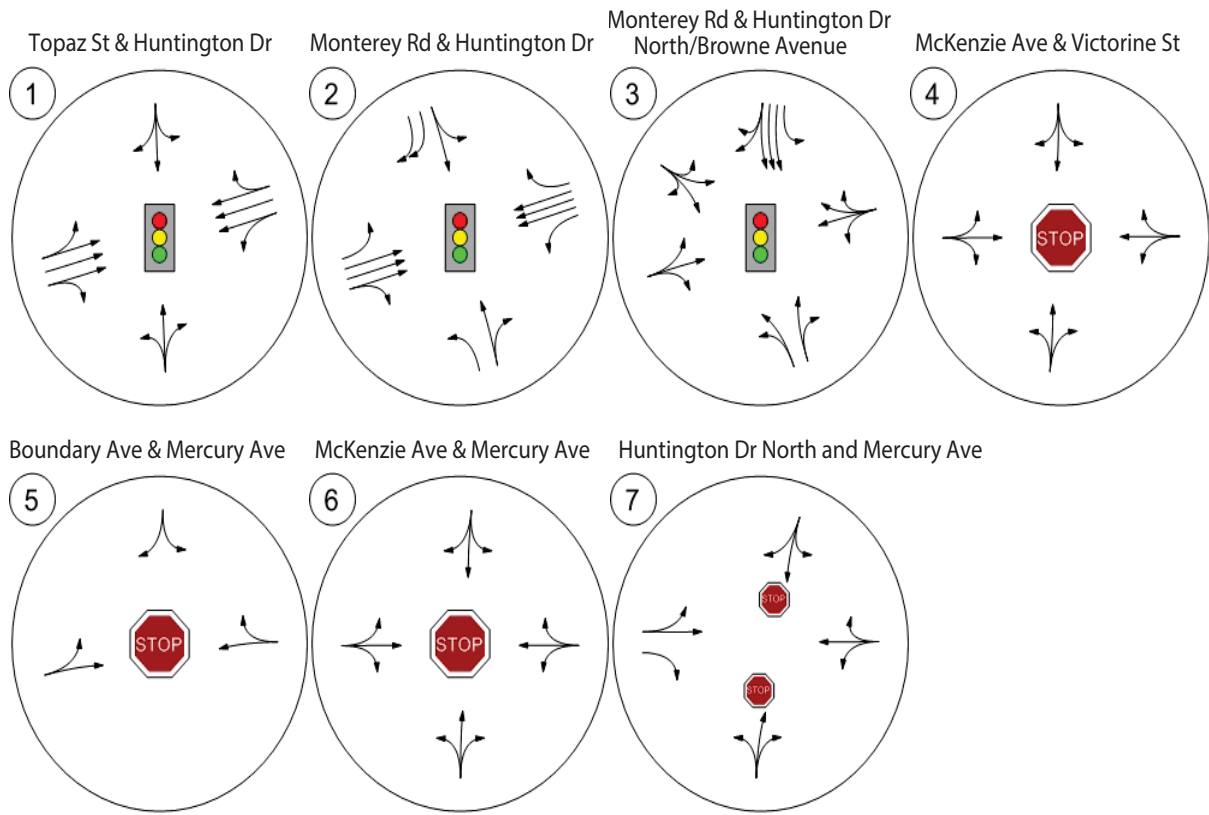
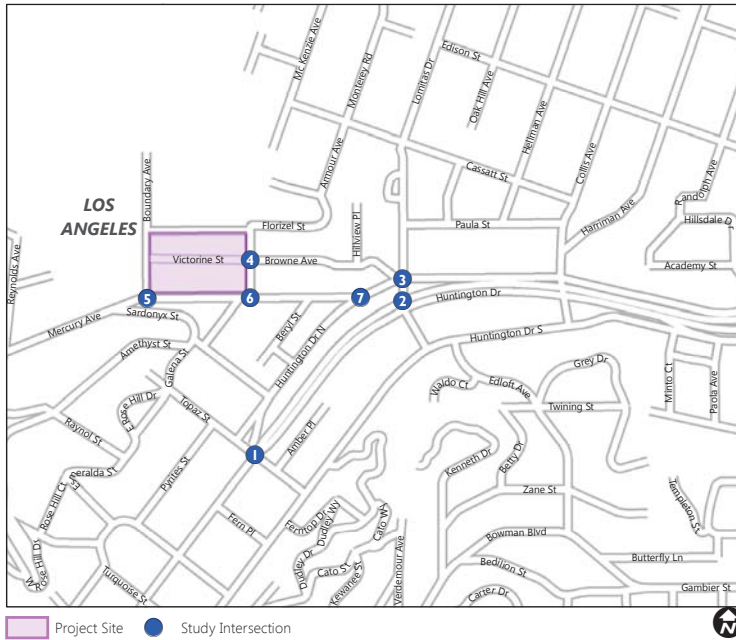
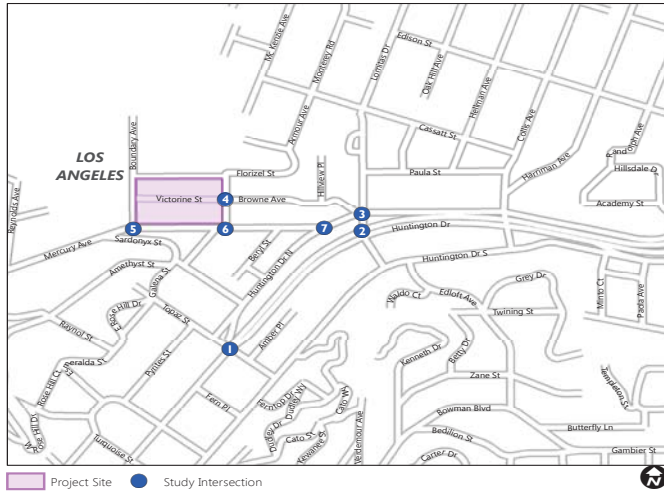


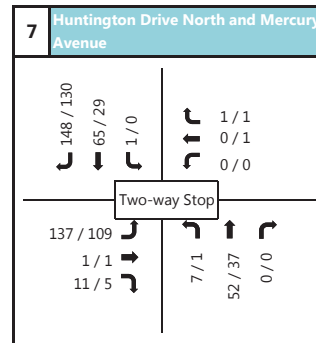
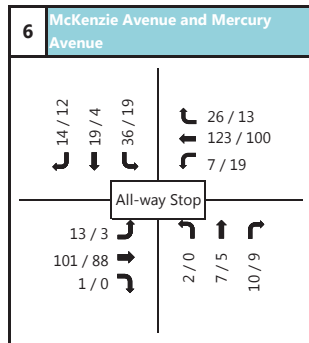
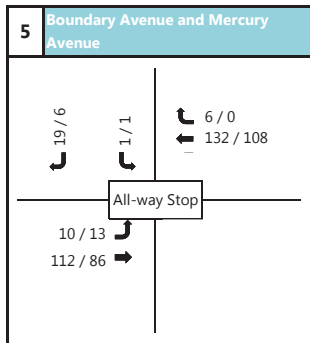
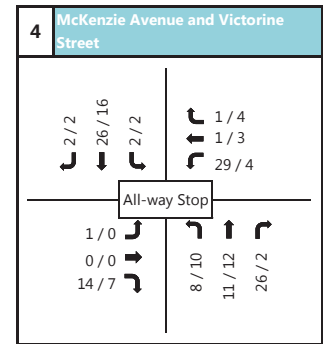
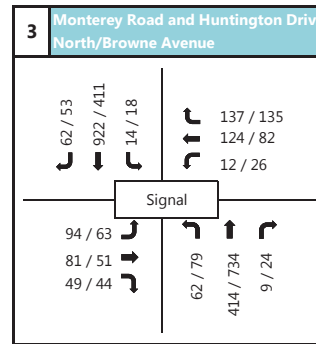
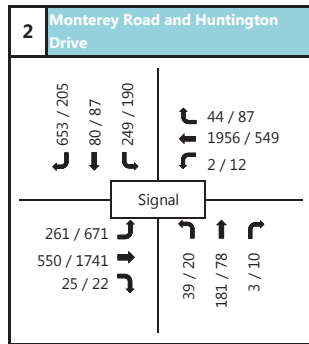
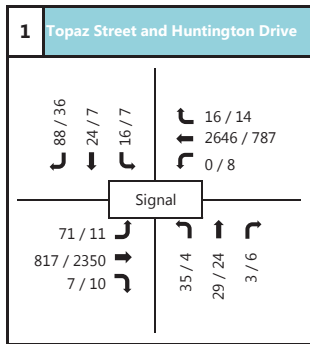
FIGURE 4

ROSE HILL COURTS

Existing - AM/PM Peak Hour Turn Volumes



xxx AM/PM turning movement volumes



3. Project Traffic

This section defines the traffic that would be generated by the proposed Project in a three-step process including trip generation, trip distribution and trip assignment.

3.1 PROJECT TRIP GENERATION

Project Trip Generation

The trip generation of the project was calculated using rates defined by the Institute of Transportation Engineers (ITE) *Trip Generation (10th edition)* and the Los Angeles Department of Transportation's (LADOT) Affordable Housing Guidelines. The Project trip generation summary provided in Table 4 includes the current number of units, the planned number of units (183 affordable housing units and 2 manager's units), and the net difference.

Table 4 - Project Trip Generation

Land Use	Intensity	Units	Daily Total	AM Peak			PM Peak		
				Total	In	Out	Total	In	Out
Trip Generation Rates									
Multifamily Residential (ITE 220)	-	d.u.	7.32	0.46	23%	77%	0.56	63%	37%
Affordable Housing (LADOT Rates)	-	d.u.	4.08	0.50	40%	60%	0.34	55%	45%
Trip Generation Totals - Existing Use to be Demolished									
Affordable Housing	-100	d.u.	-408	-50	-20	-30	-34	-19	-15
Trip Generation Totals - Proposed Replacement Uses									
Manager's Units - Multifamily	2	d.u.	15	1	0	1	1	1	0
Affordable Housing	183	d.u.	747	92	37	55	62	34	28
Total - Proposed minus Existing			354	43	17	26	29	16	13

Rates source: ITE Trip Generation, 10th Edition

The Project would generate a net total of 354 daily trips, including 43 vehicle trips during the a.m. peak hour (17 inbound and 26 outbound trips) and 29 vehicle trips during the p.m. peak hour (16 inbound and 13 outbound trips).

3.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of assigning the directions from which traffic will access the Project site. Trip distribution is dependent upon the land use characteristics of the Project, the local roadway network, and the general locations of other land uses to which Project trips would originate or terminate.

Figure 5 illustrates the trip distribution percentages at the study intersections that were used for the traffic impact analysis.

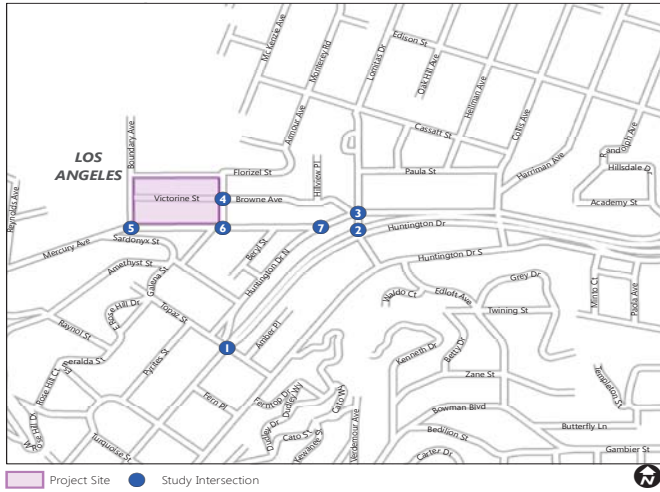
3.3 PROJECT TRIP ASSIGNMENT

The final product of the trip assignment process is a full accounting of Project trips by direction and turning movement at the study intersections. Trips were assigned based on distribution inputs to the traffic analysis calculations.

The Project trips for the weekday a.m. and p.m. peak hour trips are illustrated on Figure 6.

FIGURE 5

ROSE HILL COURTS Project Trip Distribution



XX% Project Trip Distribution

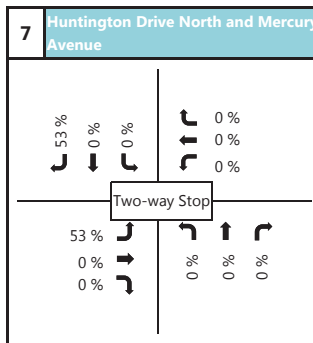
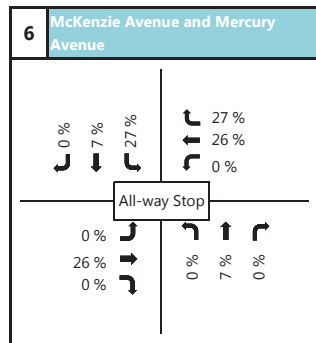
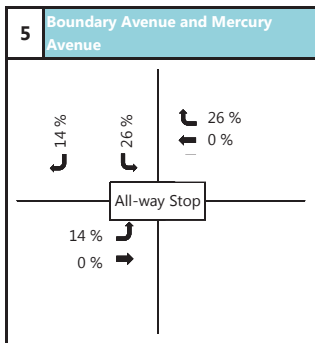
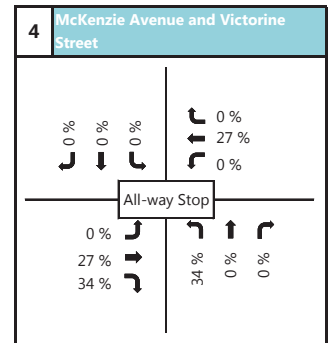
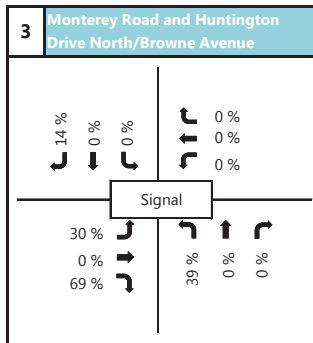
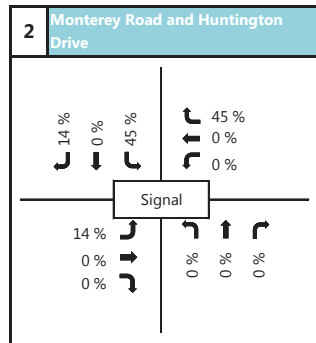
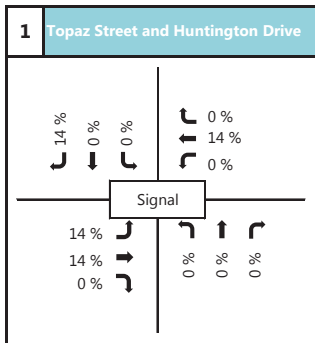
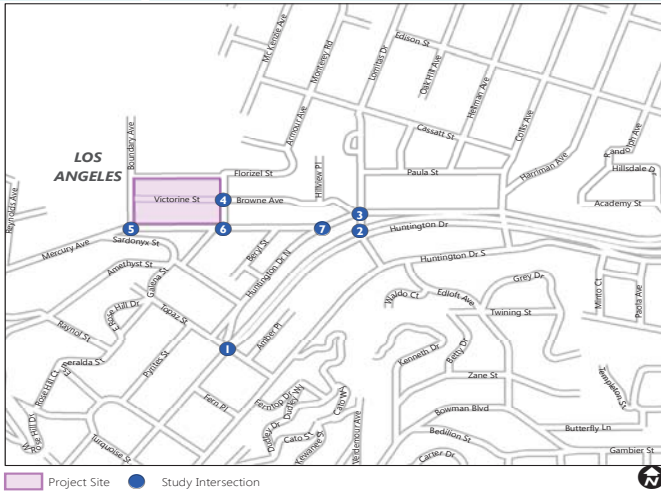


FIGURE 6

ROSE HILL COURTS

Project Trip Assignment - AM/PM Peak Hour



xxx AM/PM turning movement volumes

1 Topaz Street and Huntington Drive	
<p>4/0 0/0 0/0</p> <p>0/0 4/4 0/0</p> <p>Signal</p> <p>1/0 1/7 0/0</p> <p>0/0 0/0 0/0</p>	<p>0/0 4/4 0/0</p> <p>0/0 0/0 0/0</p> <p>Signal</p> <p>1/7 0/0 0/0</p> <p>0/0 0/0 0/0</p>

2 Monterey Road and Huntington Drive	
<p>4/4 0/0 15/9</p> <p>4/15 0/0 0/0</p> <p>Signal</p> <p>1/7 0/0 0/0</p> <p>0/0 0/0 0/0</p>	<p>0/0 4/15 0/0</p> <p>0/0 0/0 0/0</p> <p>Signal</p> <p>1/7 0/0 0/0</p> <p>0/0 0/0 0/0</p>

3 Monterey Road and Huntington Drive North/Browne Avenue	
<p>2/6 0/0 0/0</p> <p>0/0 0/0 0/0</p> <p>Signal</p> <p>7/4 0/0 20/13</p> <p>6/22 0/0 0/0</p>	<p>0/0 0/0 0/0</p> <p>0/0 0/0 0/0</p> <p>Signal</p> <p>7/4 0/0 20/13</p> <p>6/22 0/0 0/0</p>

4 McKenzie Avenue and Victorine Street	
<p>0/0 0/0 0/0</p> <p>0/0 2/10 0/0</p> <p>All-way Stop</p> <p>0/0 9/6 11/6</p> <p>4/10 0/0 0/0</p>	<p>0/0 2/10 0/0</p> <p>0/0 0/0 0/0</p> <p>All-way Stop</p> <p>0/0 9/6 11/6</p> <p>4/10 0/0 0/0</p>

5 Boundary Avenue and Mercury Avenue	
<p>4/2 9/5 2/8 0/0</p> <p>All-way Stop</p> <p>1/4 0/0</p>	<p>2/8 0/0</p> <p>All-way Stop</p> <p>1/4 0/0</p>

6 McKenzie Avenue and Mercury Avenue	
<p>0/0 2/0 9/6</p> <p>3/10 2/8 0/0</p> <p>All-way Stop</p> <p>0/0 9/5 0/0</p> <p>0/0 1/0 0/0</p>	<p>3/10 2/8 0/0</p> <p>All-way Stop</p> <p>0/0 9/5 0/0</p> <p>0/0 1/0 0/0</p>

7 Huntington Drive North and Mercury Avenue	
<p>5/18 0/0 0/0</p> <p>0/0 0/0 0/0</p> <p>Two-way Stop</p> <p>18/11 0/0 0/0</p> <p>0/0 0/0 0/0</p>	<p>0/0 0/0 0/0</p> <p>0/0 0/0 0/0</p> <p>Two-way Stop</p> <p>18/11 0/0 0/0</p> <p>0/0 0/0 0/0</p>

4. Existing with-Project Conditions

This section documents existing traffic conditions at the study intersections with the addition of Project-generated traffic.

Traffic volumes for these conditions were derived by adding Project trips to the existing traffic volumes. Since the project will involve closing Victorine Street at McKenzie Avenue, observed westbound trips at the intersection of McKenzie Avenue and Browne Avenue were diverted to adjacent intersections as part of this scenario. Table 5 summarizes the resulting V/C and LOS values at the study intersections for the Existing with-Project conditions.

**Table 5- Intersection Performance –
Existing With-Project**

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Topaz Street & Huntington Drive	0.653	B	0.467	A
2	Monterey Rd & Huntington Drive	0.854	D	0.713	C
3	Monterey Rd & Huntington Drive North/Browne Avenue	0.468	A	0.661	B

LOS = Level of Service; V/C = Volume-to-Capacity ratio

All of the study intersections would continue to operate at LOS D or better during both a.m. and p.m. peak hours. Operations at the analyzed neighborhood intersections are discussed within Section 7 of this report.

The Existing with-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 7. The LADOT Critical Movement Analysis (CMA) calculation worksheets and output from the Highway Capacity Manual analysis are provided in Appendix C of this report.

The cumulative Project impact analysis is discussed in Section 7 of this report. Determination of potentially significant traffic impacts created by Project traffic is also made in Section 7.

FIGURE 7

ROSE HILL COURTS

Existing with Project - AM/PM Peak Hour Traffic Volumes



xxx AM/PM turning movement volumes

1 Topaz Street and Huntington Drive	
<p>92 / 36 24 / 7 16 / 7</p>	<p>16 / 14 2650 / 791 0 / 8</p>
Signal	
<p>72 / 11 818 / 2357 7 / 10</p>	<p>35 / 4 29 / 24 3 / 6</p>

2 Monterey Road and Huntington Drive	
<p>657 / 209 80 / 87 264 / 199</p>	<p>48 / 102 1956 / 549 2 / 12</p>
Signal	
<p>262 / 678 550 / 1741 25 / 22</p>	<p>39 / 20 181 / 78 3 / 10</p>

3 Monterey Road and Huntington Drive North/Browne Avenue	
<p>64 / 59 922 / 411 14 / 18</p>	<p>137 / 135 124 / 82 12 / 26</p>
Signal	
<p>101 / 67 81 / 51 69 / 57</p>	<p>68 / 101 414 / 734 9 / 24</p>

4 McKenzie Avenue and Victorine Street	
<p>2 / 2 26 / 16 2 / 2</p>	<p>1 / 4 3 / 13 29 / 4</p>
All-way Stop	
<p>1 / 0 9 / 6 25 / 13</p>	<p>12 / 20 11 / 12 26 / 2</p>

5 Boundary Avenue and Mercury Avenue	
<p>23 / 8 10 / 6</p>	<p>8 / 8 132 / 108</p>
All-way Stop	
<p>11 / 17 112 / 86</p>	

6 McKenzie Avenue and Mercury Avenue	
<p>14 / 12 21 / 4 45 / 25</p>	<p>29 / 23 125 / 108 7 / 19</p>
All-way Stop	
<p>13 / 3 110 / 93 1 / 0</p>	<p>2 / 0 8 / 5 10 / 9</p>

7 Huntington Drive North and Mercury Avenue	
<p>153 / 148 65 / 29 1 / 0</p>	<p>1 / 1 0 / 1 0 / 0</p>
Two-way Stop	
<p>155 / 120 1 / 1 11 / 5</p>	<p>7 / 1 52 / 37 0 / 0</p>

5. Future without-Project Conditions

This section provides an analysis of future traffic conditions in the study area with area/cumulative project trips, but without Project traffic. The proposed Project is anticipated to be completed in the year 2025.

5.1 AMBIENT GROWTH

For the analysis of background traffic for year 2025, a traffic growth factor of one-percent per year was utilized to increase traffic from the existing (2018) traffic volumes.

5.2 AREA PROJECTS

Based on a review of the planned area projects data obtained from LADOT Development Review, seven area projects were included in the cumulative traffic analysis. Table 6 provides the trip generation estimates for the area projects identified within the City of Los Angeles.

Table 6 – Area Projects Trip Generation Estimate

ID	Location	Land Use	Intensity	Units	Daily Total	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	625 E Coleman Avenue	Private College	532	students	1,245	93	25	118	33	76	109
2	2520 N Eastern Avenue	Elementary School	530	students	1,363	167	155	322	62	59	121
		Apartments	20	d.u.							
		Restaurant	23230	k.s.f.							
3	3303 N Broadway	Medical Office	47,300	k.s.f.	1,384	74	20	94	38	103	141
4	167 W Avenue 34	Apartments	410	k.s.f.	2,128	29	132	161	133	66	199
		Retail	10,000	k.s.f.							
		Office	30,000	k.s.f.							
5	2730 N Onyx Drive	Single Family Homes	31	d.u.	358	8	23	31	23	14	37
6	4208 E Huntington Drive South	Apartments	90	d.u.	544	25	31	56	23	21	44
7	4201 N Figueroa Street	Apartments	16	d.u.	395	3	11	14	22	13	35
		Retail	7,301	k.s.f.							
TOTAL					6,172	306	372	678	301	276	577

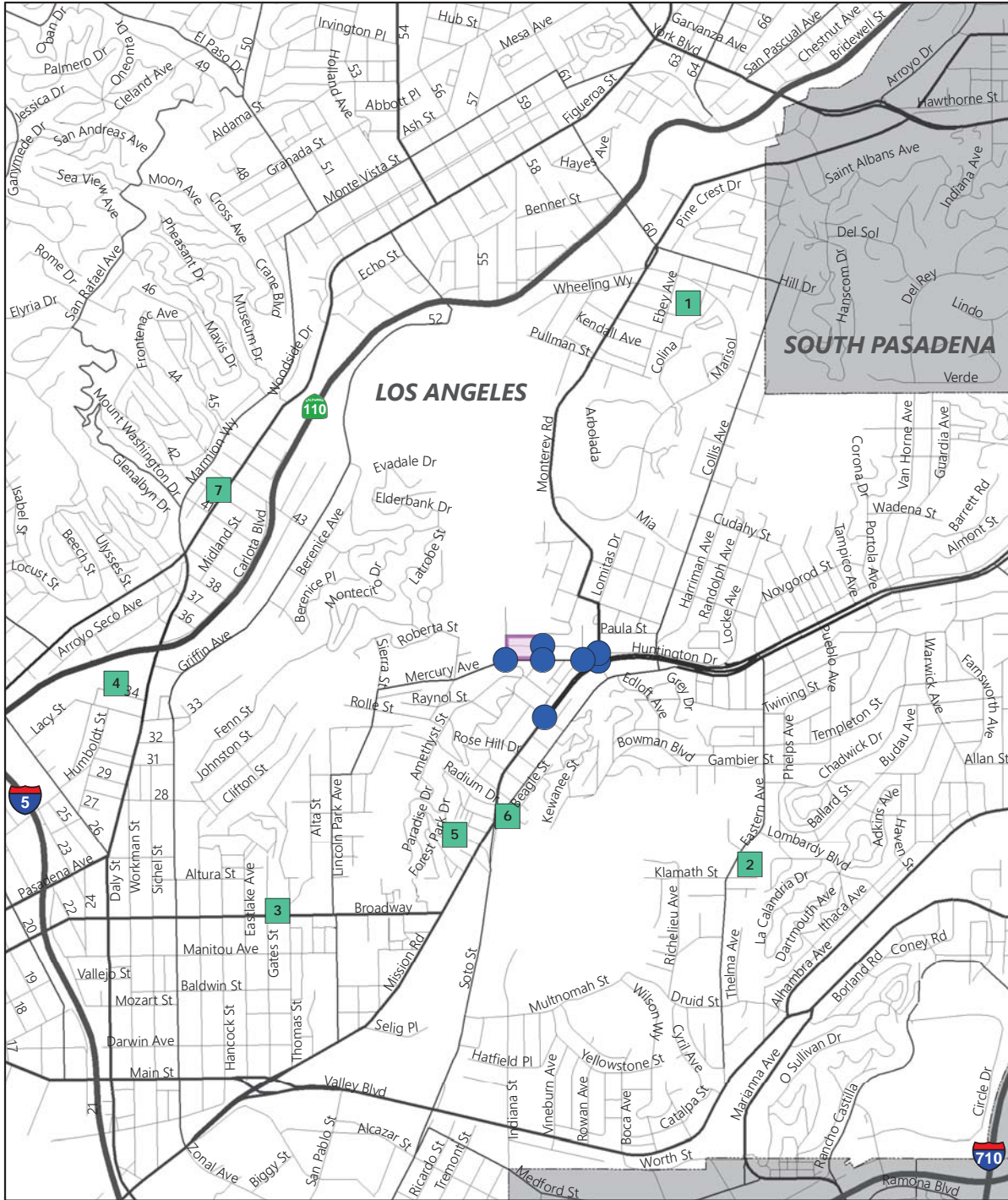
Source: Location of area projects and trip generation are provided by LADOT.

The locations of the area projects are illustrated on Figure 8. The area projects volume figures for the weekday a.m. and p.m. peak hours are provided on Figure 9.

FIGURE 8

ROSE HILL COURTS

Location of Related Projects



Project Site Study Intersection



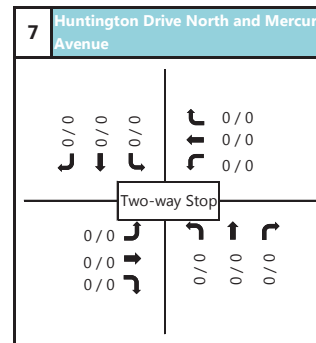
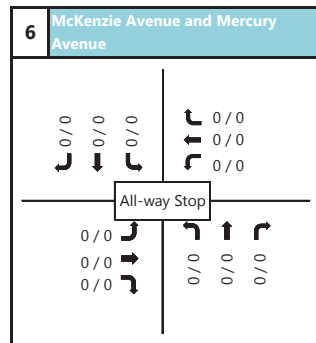
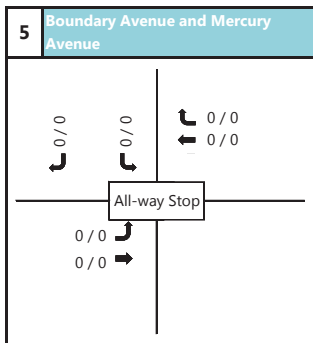
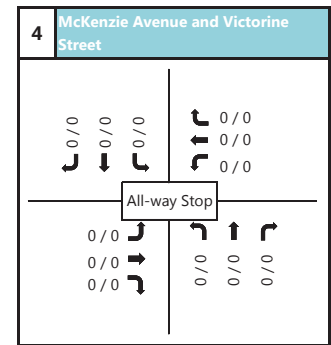
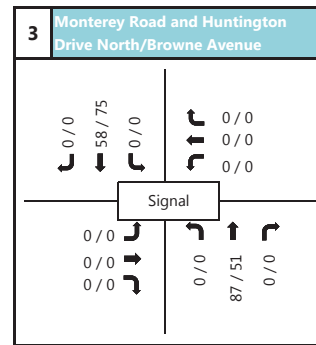
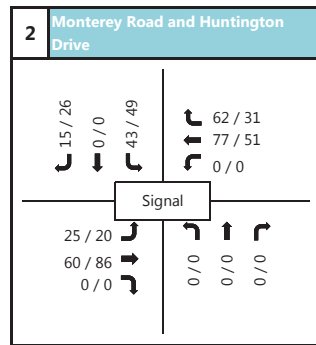
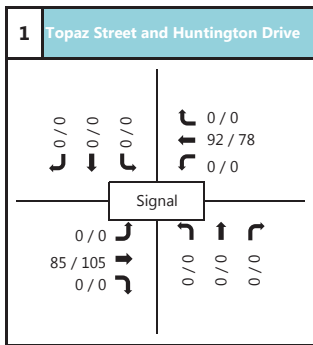
FIGURE 9

ROSE HILL COURTS

Related Project Trip Assignment - AM/PM Peak Hour



xxx AM/PM turning movement volumes



5.3 FUTURE WITHOUT-PROJECT INTERSECTION LEVELS OF SERVICE

The future without-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 10.

Table 7 summarizes the V/C and LOS values at the study intersections under this scenario. Operations at the intersection of Monterey Road and Huntington Drive would degrade to LOS E during the a.m. peak hour.

**Table 7 – Intersection Performance –
Future without-Project**

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Topaz Street & Huntington Drive	0.722	C	0.531	A
2	Monterey Rd & Huntington Drive	0.979	E	0.826	D
3	Monterey Rd & Huntington Drive North/Browne Avenue	0.567	A	0.751	C

LOS = Level of Service; V/C = Volume-to-Capacity ratio

The LADOT Critical Movement Analysis (CMA) calculation worksheets and output from the 2010 Highway Capacity Manual analysis are provided in Appendix C of this report.

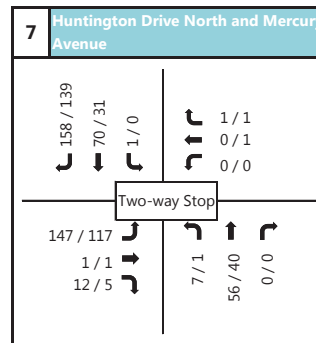
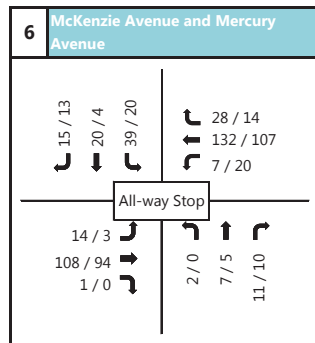
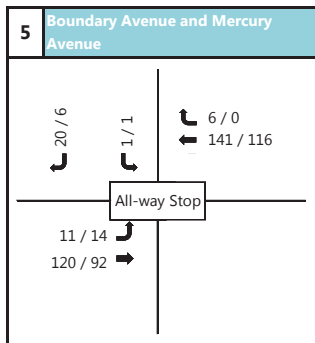
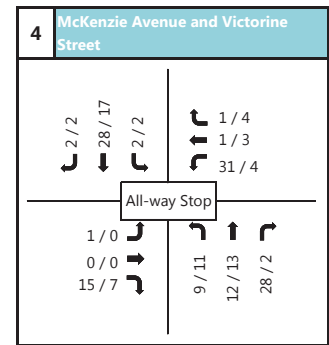
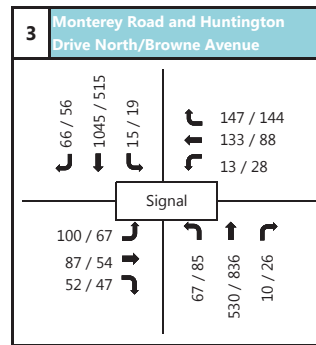
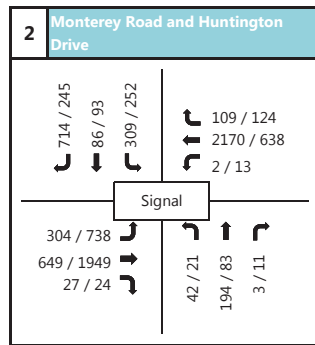
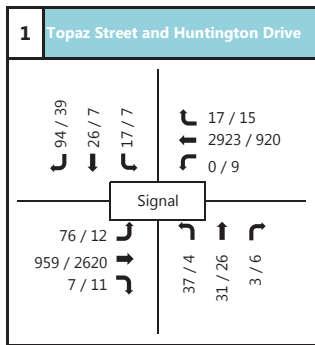
FIGURE 10

ROSE HILL COURTS

Future without Project - AM/PM Peak Hour Traffic Volumes



xxx AM/PM turning movement volumes



6. Future with-Project Conditions

This section documents future traffic conditions at the study intersections with the addition of Project-generated traffic. Traffic volumes for these conditions were derived by adding Project trips to the future without-Project scenario volumes.

Table 8 summarizes the V/C and LOS values at the study intersections under this scenario. The intersection of Monterey Road and Huntington Drive would continue to operate at LOS E during the a.m. peak hour.

**Table 8 - Intersection Performance –
Future with-Project**

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Topaz Street & Huntington Drive	0.727	C	0.533	A
2	Monterey Rd & Huntington Drive	0.988	E	0.831	D
3	Monterey Rd & Huntington Drive North/Browne Avenue	0.571	A	0.753	C

LOS = Level of Service; V/C = Volume-to-Capacity ratio

The Future with-Project traffic volumes for the a.m. and p.m. peak hours are illustrated on Figure 11.

The LADOT Critical Movement Analysis (CMA) calculation worksheets and output from the 2010 Highway Capacity Manual analysis are provided in Appendix C of this report.

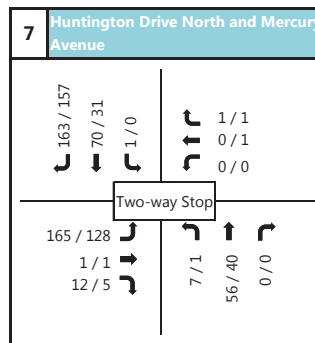
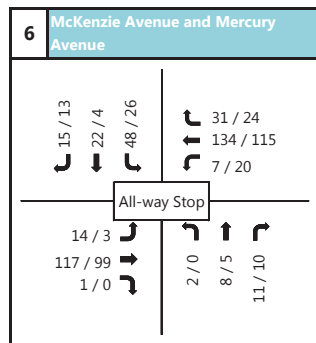
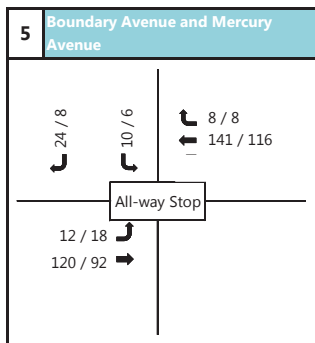
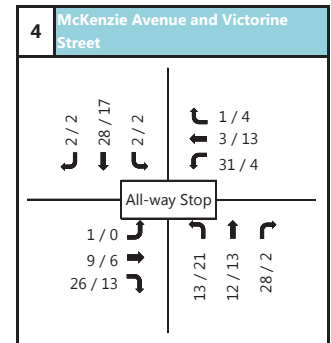
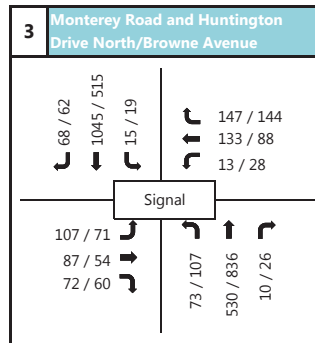
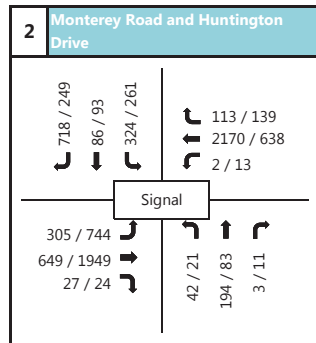
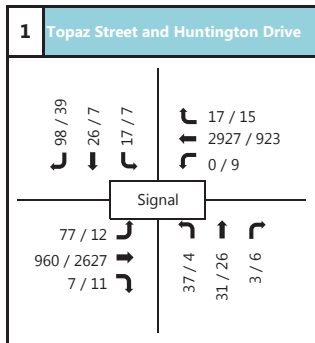
FIGURE 11

ROSE HILL COURTS

Future with Project - AM/PM Peak Hour Traffic Volumes



xxx AM/PM turning movement volumes



7. Project Traffic Impacts and Mitigation Measures

7.1 DETERMINATION OF TRAFFIC IMPACTS

Traffic impacts are identified if a proposed development will result in a significant change in traffic conditions at a study intersection. A significant impact is typically identified if project-related traffic will cause service levels to deteriorate beyond a threshold limit specified by the overseeing agency. Impacts can also be significant if an intersection is already operating below an acceptable level of service and project related traffic will worsen conditions within the specified threshold range.

The City of Los Angeles Department of Transportation has established specific thresholds for project-related increases in the volume-to-capacity ratio (V/C) of signalized study intersections. The following increases in peak-hour V/C ratios are considered significant impacts:

Level of Service	Final V/C*	Project Related v/c increase
C	0.701 – 0.800	Equal to or greater than 0.040
D	0.801 – 0.900	Equal to or greater than 0.020
E and F	0.901 or more	Equal to or greater than 0.010

Note: Final V/C is the V/C ratio at an intersection, considering impacts from the project, ambient growth, trips from area/cumulative projects, but without proposed traffic impact mitigations.

For non-signalized study intersections, significant impacts were defined where study intersection operations worsened to or within the LOS F range.

7.2 PROJECT TRAFFIC IMPACTS – EXISTING WITH-PROJECT CONDITIONS

Table 9 provides a summary of the Project impacts under existing conditions. Traffic impacts created by the proposed Project were determined by comparing the existing scenario conditions to the existing with-Project scenario conditions.

**Table 9 - Determination of Project Impacts –
Existing With-Project Conditions**

Study Intersections	Peak Hour	Existing Conditions		Existing with Project		Change in V/C	Sig Impact?
		V/C	LOS	V/C	LOS		
1 Topaz Street & Huntington Drive	AM	0.647	B	0.653	B	0.006	No
	PM	0.466	A	0.467	A	0.001	No
2 Monterey Rd & Huntington Drive	AM	0.845	D	0.854	D	0.009	No
	PM	0.708	C	0.713	C	0.005	No
3 Monterey Rd & Huntington Drive North/Browne Avenue	AM	0.464	A	0.468	A	0.004	No
	PM	0.659	B	0.661	B	0.002	No

LOS = Level of Service; V/C = Volume-to-Capacity ratio

The proposed Project would not create significant traffic impacts at any of the study intersections under existing with-Project conditions. Therefore mitigation measures are not recommended under the existing period.

7.3 PROJECT TRAFFIC IMPACTS – FUTURE WITH-PROJECT CONDITIONS

Table 10 provides a summary of the Project impacts under future conditions. Traffic impacts created by the Project were determined by comparing the Future pre-Project conditions to the Future post-Project conditions.

**Table 10 - Determination of Project Impacts –
Future With-Project**

Study Intersections	Peak Hour	Future Without Project		Future with Project		Change in V/C	Sig Impact?
		V/C	LOS	V/C	LOS		
1 Topaz Street & Huntington Drive	AM	0.722	C	0.727	C	0.005	No
	PM	0.531	A	0.533	A	0.002	No
2 Monterey Rd & Huntington Drive	AM	0.979	E	0.988	E	0.009	No
	PM	0.826	D	0.831	D	0.005	No
3 Monterey Rd & Huntington Drive North/Browne Avenue	AM	0.567	A	0.571	A	0.004	No
	PM	0.751	C	0.753	C	0.002	No

LOS = Level of Service; V/C = Volume-to-Capacity ratio

Under future with-Project conditions, the proposed Project would not create any significant traffic impacts at the study intersections. Therefore mitigation measures are not recommended under the future period.

7.4 OTHER PROJECT IMPACTS – NEIGHBORHOOD INTERSECTIONS

The LADOT traffic impact study guidelines state the following regarding the analysis of unsignalized intersections:

“Unsignalized intersections should be evaluated solely to determine the need for the installation of a traffic signal or other traffic control device(s), but will not be included in the impact analysis.... For these intersections, the overall intersection delay should be measured pursuant to procedures accepted by LADOT during the scoping process. Based on the estimated delay, if the resultant LOS is E or F in the “Future with Project” scenario, then the intersection should be evaluated for the potential installation of a new traffic signal. The study shall include a traffic signal warrant analysis...”

The four intersections included in this traffic study for the examination of potential neighborhood traffic impacts of the Project are either adjacent to the Project site, or on the route between the site and the nearest arterial. These intersections were analyzed in generally the same manner as the primary study intersections, but these locations are not controlled by traffic signals but by stop signs on the minor approaches. The Highway Capacity Manual unsignalized method was applied, and traffic counts, ambient background growth, area/cumulative project trips, and Project trips were applied in the same manner.

Table 11 summarizes the analysis of the included neighborhood intersections. For post-Project conditions, projected westbound trips at the intersection of McKenzie Avenue and Browne Avenue were diverted to adjacent intersections in order to account for the planned closure of Victorine Street.

The delay values in the table are based on average vehicle delay at the minor approaches at the partially-controlled intersection of Huntington Drive North and Mercury Avenue and on average vehicle delay at all approaches for the all-way stop control configurations at the other three intersections.

Table 11 – Operations Analysis of Neighborhood Intersections

Study Intersections		Peak Hour	Future Without Project		Future with Project	
			Delay (sec.)	LOS	Delay (sec.)	LOS
4	McKenzie Ave & Browne Ave	AM	7.1	A	7.2	A
		PM	7.0	A	7.0	A
5	Boundary Ave & Mercury Ave	AM	7.8	A	7.8	A
		PM	7.6	A	7.6	A
6	McKenzie Ave & Mercury Ave	AM	8.1	A	8.1	A
		PM	7.8	A	7.8	A
7	Huntington Drive N & Mercury Ave	AM	15.0	B	15.7	C
		PM	12.6	B	12.9	B

Delay = Approaching average vehicle delay in seconds.

As the vehicle delay at these intersections does not reach LOS E or F in the future without-Project or future with-Project periods, additional signal warrant analysis was not conducted. No further analysis of these intersections is necessary.

7.5 POTENTIAL CONSTRUCTION PERIOD IMPACTS

During Project demolition and construction activities, delivery truck trips and construction employee commuting could significantly contribute to traffic within the study area. For this reason, an analysis of potential traffic impacts during the Project construction period was analyzed and is summarized here, based on the anticipated number of hauling/delivery trucks and employee vehicle trips.

The construction of the proposed Project will occur in two phases, up to the planned Project completion year of 2025.

The construction trip generation intensities will vary based on the construction phase, truck hauling patterns, and construction employment intensities. During the peak traffic period some locations in the study area may be affected by construction traffic, especially the intersection of Monterey Road and Huntington Drive, where for future conditions without the proposed Project the AM peak-hour LOS is E and the PM peak-hour LOS is D. Any incremental impacts that might occur due to Project construction will be temporary, however.

It is recommended that the construction manager schedules truck traffic and employee shifts to avoid creating trips during the peak traffic periods, as is feasible for construction operations. All measures including identified truck routes and designated employee parking areas must be detailed within a Construction Management Plan to be reviewed and approved by LADOT before the start of construction. These measures would reduce construction impacts on the area roadway network.

8. Congestion Management Plan Conformance

This section demonstrates the ways in which this traffic study was prepared to be in conformance with the procedures mandated by the County of Los Angeles Congestion Management Program (CMP).

The CMP was created statewide because of Proposition 111 and was implemented locally by the Los Angeles County Metropolitan Transportation Authority (Metro). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potentially regional significance be analyzed. A specific system of arterial roadways plus all freeways comprises the CMP system. Per CMP Transportation Impact Analysis (TIA) Guidelines, a traffic impact analysis is conducted where:

- At CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed Project will add 50 or more vehicle trips during either a.m. or p.m. weekday peak hours.
- At CMP mainline freeway-monitoring locations, where the Project will add 150 or more trips, in either direction, during the either the a.m. or p.m. weekday peak hours.
- On CMP transit corridors within a one-quarter mile distance from a site.

Roadway Impact Analysis

The nearest CMP arterial monitoring intersection is approximately 1.8 miles from the Project site, located at the intersection of the northbound I-710 freeway off-ramp and Valley Blvd.

Based on the trip generation defined in Table 4, it is not expected that 50 or more new Project trips per hour would be added at this CMP intersection. Therefore, no further analysis of potential CMP impacts is required.

The nearest freeway monitoring station is located on the SR-110 freeway, at Pasadena Avenue, which is about 1.2 miles from the Project site. Based on the trip generation defined in table 4, the Project is not expected to add more than 150 trips at this location. Therefore, no further analysis of potential CMP impacts is required.

Transit Service Impacts

Metro Bus Line 252 has stops on Mercury Avenue, at the south side of the project site. Metro Bus Line 256 has stops in the vicinity of the Monterey Road/Huntington Drive intersection, at an approximate 1,200-foot walking distance (or approximately one-quarter of a mile) from the project site.

The Metro bus service on Huntington Drive, provided by joint local and limited-service line 78/79/378, is the closest CMP transit route as designated by Metro to the site.

The project trip generation without trip generation credits, as defined in Section 3, is 762 daily trips, including 93 vehicle trips during the a.m. peak hour and 63 vehicle trips during the p.m. peak hour.

The project trip generation was adjusted by values defined by the CMP to calculate estimated transit trips. The CMP defines transit mode splits for developments located near or adjacent to a CMP transit corridor, which is defined by stops on a CMP transit line. For residential developments, this rate is defined at 5 percent

The following calculations were made, based on the defined CMP methodology:

- Project person trips (1.4 times vehicle trips) would be 1,067 on a daily basis, including 130 trips in the a.m. peak hour and 88 trips in the p.m. peak hour.
- Applying a five percent mode split for residential uses near CMP transit to the person trips, the project transit trips would be 53 daily trips, including 7 trips in the a.m. peak hour and 4 trips in the p.m. peak hour.

It is anticipated that the existing transit service in the project area would be able to accommodate the project generated transit trips, based on the multiple transit lines available in the area and the low overall transit trip demand of seven or fewer peak-hour trips anticipated for the proposed project.

Therefore, given the number of transit trips generated by the project and the existing transit routes in the project vicinity, it is concluded that the existing public transit system would not be significantly impacted by the proposed Project.

APPENDIX A
Approved Memorandum of
Understanding (MOU)



Transportation Impact Study Memorandum of Understanding (MOU)

This MOU acknowledges that the Transportation Impact Study for the following Project will be prepared in accordance with the latest version of LADOT’s Transportation Impact Study Guidelines:

I. PROJECT INFORMATION

Project Name: Rose Hill Courts Redevelopment

Project Address: 4446 Florizel Street, Los Angeles, CA 90032

Project Description: The project includes demolition of existing Rose Hill Courts (100 units) and construction of 183 affordable housing units and 2 manager’s units.

Study will build upon previous TIS for the former proposed rehabilitation project of the 100-unit complex, completed in December 2016.

LADOT Project Case Number: _____ Project Site Plan attached? (Required) Yes No

II. TRIP GENERATION

Geographic Distribution: N 20.00 % S 15.00 % E 30.00 % W 35.00 %

Illustration of Project trip distribution percentages at Study intersections attached? (Required) Yes No

Trip Generation Adjustments (Exact amount of credit subject to approval by LADOT)

	Yes	No
Transit Usage	<input type="checkbox"/>	<input type="checkbox"/>
Transportation Demand Management	<input type="checkbox"/>	<input type="checkbox"/>
Existing Active Land Use	<input type="checkbox"/>	<input type="checkbox"/>
Previous Land Use	<input type="checkbox"/>	<input type="checkbox"/>
Internal Trip	<input type="checkbox"/>	<input type="checkbox"/>
Pass-By Trip	<input type="checkbox"/>	<input type="checkbox"/>

Source of Trip Generation Rate(s)? ITE 9th Edition Other: ITE 10th edition for multi-family residential; LADOT affordable housing rates

Trip generation table including a description of the proposed land uses, ITE rates, estimated morning and afternoon peak hour volumes (ins/outs/totals), proposed trip credits, etc. attached? (Required) Yes No

	<u>IN</u>	<u>OUT</u>	<u>TOTAL</u>
AM Trips	<u>17</u>	<u>26</u>	<u>43</u>
PM Trips	<u>16</u>	<u>13</u>	<u>29</u>

III. STUDY AREA AND ASSUMPTIONS

Project Buildout Year: 2025 Ambient or CMP Growth Rate: 1 % Per Yr.

Related Projects List, researched by the consultant and approved by LADOT, attached? (Required) Yes No

Map of Study Intersections attached? (May be subject to LADOT revision after initial impact analysis) Yes No

Is this Project located on a street within the High Injury Network? Yes No

IV. CONTACT INFORMATION

CONSULTANT

DEVELOPER

Name: Brian Marchetti / KOA Corporation

Andre White / The Related Companies of California, LLC

Address: 1100 Corporate Center Dr, Suite 201 Monterey Park CA 91754

18201 Von Karman Avenue, Suite 900, Irvine, CA 92612

Phone Number: 323-260-4703

949.660.7272

E-Mail: bmarchetti@koacorp.com

AWhite@Related.com

Approved by:

Brian Marchetti

Digitally signed by Brian Marchetti
DN: cn=Brian Marchetti, o=KOA Corporation,
ou, email=bmarchetti@koacorp.com, c=US
Date: 2019.01.21 16:41:30 -0500

Consultant's Representative

Date

X

LADOT Representative



2/1/2019

Date

ATTACHMENT A

Project Site Plan

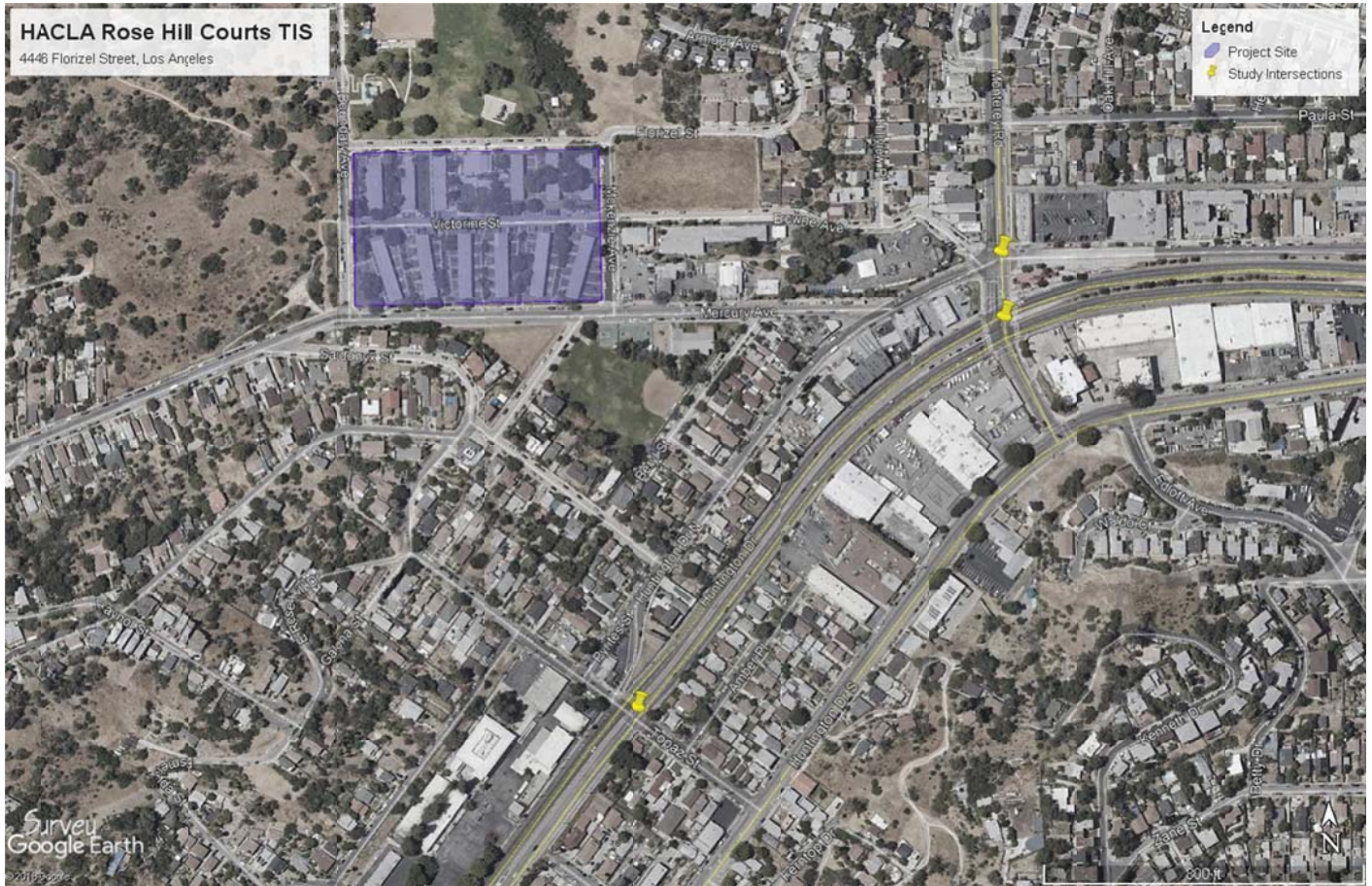


RELATED
Site Plan
Site Plan
Site Plan
Site Plan

ROSE HILL COURTS, LOS ANGELES

WITHEE MALCOLM
ARCHITECTS
3851 VAN NUYS BOULEVARD, SUITE 200, VAN NUYS, CA 91411
TEL: 818.708.1100 FAX: 818.708.1101
WWW.WITHEEMALCOLM.COM

ATTACHMENT B Study Intersection



STUDY INTERSECTIONS:

1. Monterey Road & Huntington Drive North
2. Monterey Road & Huntington Drive
3. Topaz Street & Huntington Drive

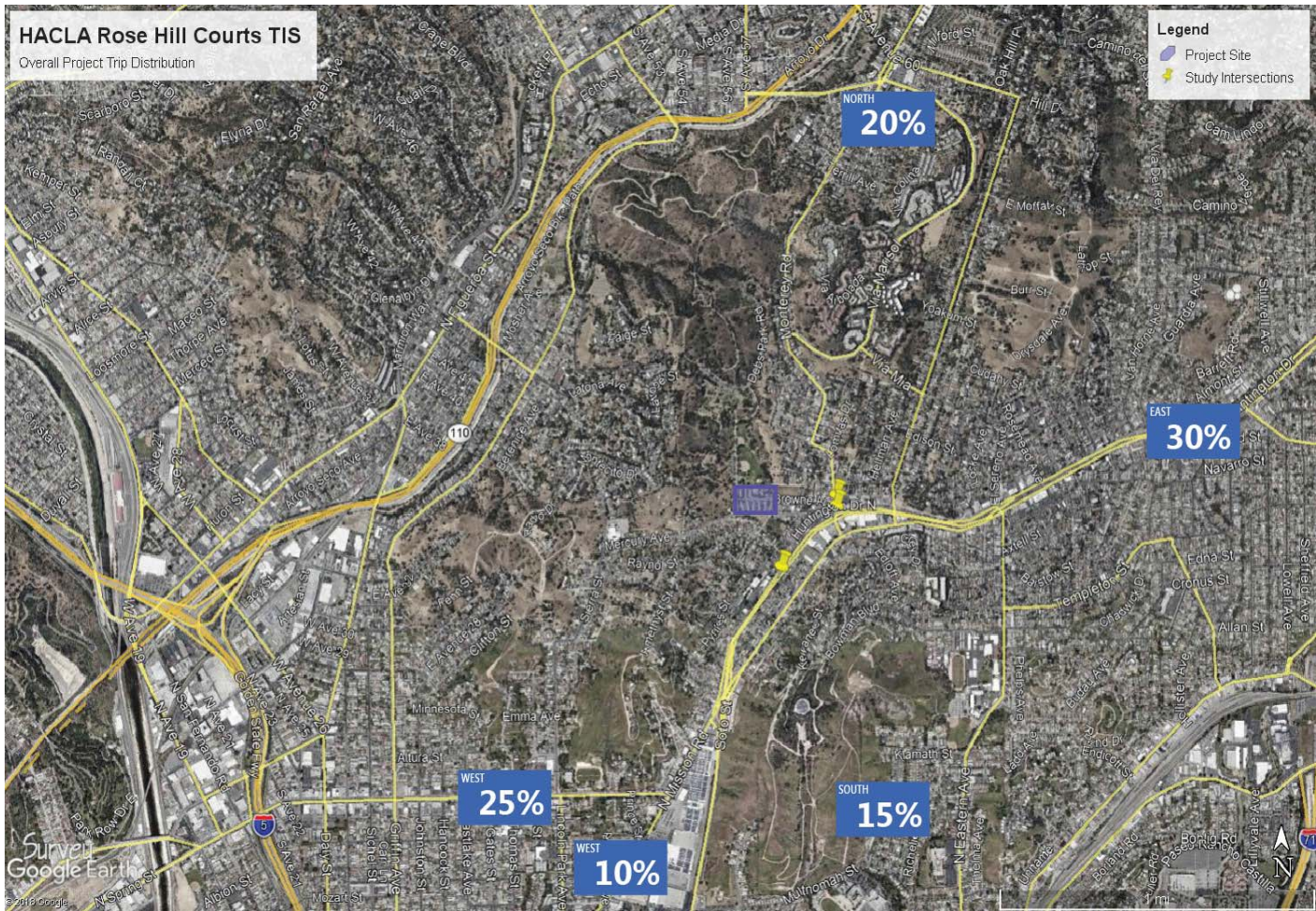
ATTACHMENT C
Project Trip Generation

Land Use	Intensity	Units	Daily Total	AM Peak			PM Peak		
				Total	In	Out	Total	In	Out
Trip Generation Rates									
Multifamily Residential (ITE 220)	-	d.u.	7.32	0.46	23%	77%	0.56	63%	37%
Affordable Housing (LADOT Rates)	-	d.u.	4.08	0.50	40%	60%	0.34	55%	45%
Trip Generation Totals - Existing Use to be Demolished									
Affordable Housing	-100	d.u.	-408	-50	-20	-30	-34	-19	-15
Trip Generation Totals - Proposed Replacement Uses									
Manager's Units - Multifamily	2	d.u.	15	1	0	1	1	1	0
Affordable Housing	183	d.u.	747	92	37	55	62	34	28
Total - Proposed minus Existing			354	43	17	26	29	16	13

Rates source: ITE Trip Generation, 10th Edition

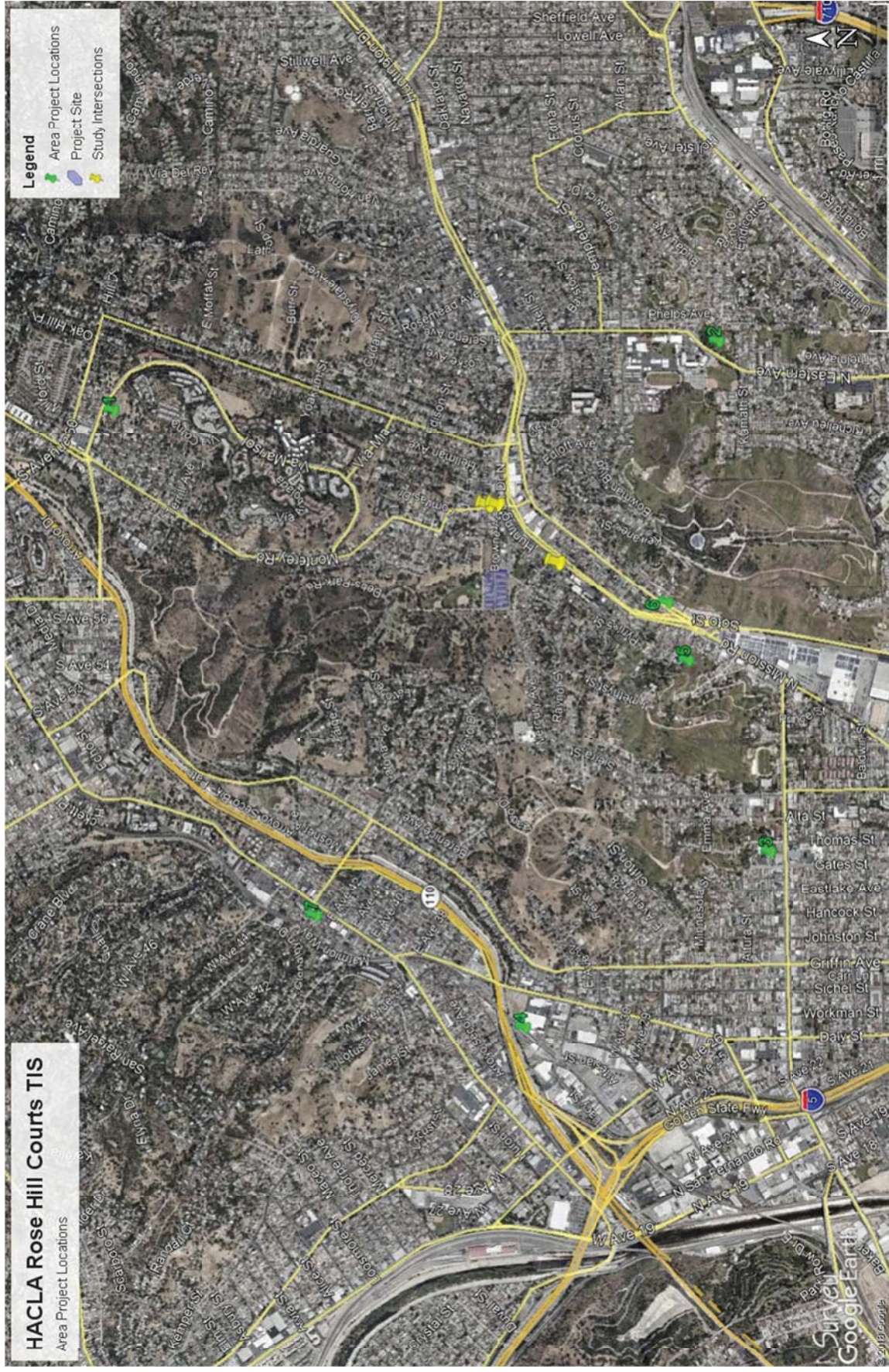
ATTACHMENT D

Overall Project Trip Distribution



ATTACHMENT D

Related Projects Map



ATTACHMENT E

Related Projects Trip Generation

ID	Location	Land Use	Intensity	Units	Daily Total	AM Peak Hour			PM Peak Hour		
						In	Out	Total	In	Out	Total
1	625 E Coleman Avenue	Private College	532	students	1,245	93	25	118	33	76	109
2	2520 N Eastern Avenue	Elementary School Apartments Restaurant	530 20 23230	students d.u. k.s.f.	1,363	167	155	322	62	59	121
3	3303 N Broadway	Medical Office	47.300	k.s.f.	1,384	74	20	94	38	103	141
4	167 W Avenue 34	Apartments Retail Office	410 10.000 30.000	k.s.f. k.s.f. k.s.f.	2,128	29	132	161	133	66	199
5	2730 N Onyx Drive	Single Family Homes	31	d.u.	358	8	23	31	23	14	37
6	4208 E Huntington Drive South	Apartments	90	d.u.	544	25	31	56	23	21	44
7	4201 N Figueroa Street	Apartments Retail	16 7.301	d.u. k.s.f.	395	3	11	14	22	13	35
TOTAL					6,172	306	372	678	301	276	577

Source: Location of area projects and trip generation are provided by LADOT.

APPENDIX B
Traffic Count Data



City Of Los Angeles
 Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

PCE ADJUSTED

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

STREET: North / South Topaz
 East/West Huntington

Day: Tuesday, May 15, 2018 Weather Sunny

Hours:

School Day: Yes District I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	6	16	298	254
BIKES	0	0	0	0
BUSES	3	3	88	81

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	32	7:45:00 AM	42	7:45:00 AM	238	8:00:00 AM	717	8:00:00 AM
PM PK 15 MIN	13	5:30:00 PM	24	5:45:00 PM	660	5:30:00 PM	224	5:30:00 PM
AM PK HOUR	80	7:15:00 AM	138	7:15:00 AM	895	7:30:00 AM	2662	7:30:00 AM
PM PK HOUR	36	4:00:00 PM	63	3:00:00 PM	2401	5:00:00 PM	809	4:45:00 PM

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	33	33	7	73
8-9	20	6	3	29
9-10	7	6	2	15
3-4	5	11	6	22
4-5	6	29	1	36
5-6	5	21	6	32
TOTAL	75	106	25	205

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	13	19	96	128
8-9	7	13	59	79
9-10	3	6	35	44
3-4	10	10	43	63
4-5	11	5	36	52
5-6	5	10	42	57
TOTAL	49	61	311	421

TOTAL

XING S/L

XING N/L

N-S	Ped	Sch	Ped	Sch
201	0	0	0	0
107	0	0	0	0
59	0	0	0	0
85	0	0	0	0
88	0	0	0	0
88	0	0	0	0
626	0	0	0	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	64	690	7	761
8-9	38	699	7	744
9-10	18	577	9	604
3-4	55	1433	6	1494
4-5	12	1895	10	1917
5-6	15	2378	8	2401
TOTAL	201	7671	47	7919

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	2458	19	2477
8-9	0	2546	6	2552
9-10	0	1456	7	1463
3-4	3	742	11	755
4-5	5	692	12	709
5-6	4	746	13	763
TOTAL	11	8639	68	8718

TOTAL

XING W/L

XING E/L

E-W	Ped	Sch	Ped	Sch
3237	0	0	0	0
3296	0	0	0	0
2067	0	0	0	0
2249	0	0	0	0
2626	0	0	0	0
3164	0	0	0	0
16637	0	0	0	0

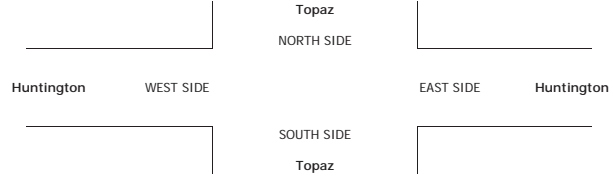
INTERSECTION TURNING MOVEMENT COUNTS
 PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 5/15/18 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	El Sereno Topaz Huntington	PROJECT #: SC1734	LOCATION #: 1	CONTROL: SIGNAL
------------------------------------	--	----------------------------------	-----------------------------	-------------------------	---------------------------

PCE Adjusted	NOTES:								AM PM MD OTHER DTMED	▲ N ◀ W S ▶ E ▼
	Class	1	2	3	4	5	6			
	Factor	1	1.5	2	3	2	2			

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL

7:00 AM	3	2	1	1	2	18	11	122	2	0	591	4	757						0		
7:15 AM	8	7	5	2	3	23	10	158	2	0	584	4	806						0		
7:30 AM	8	7	0	4	7	26	16	219	1	0	671	5	963						0		
7:45 AM	14	17	1	6	7	29	27	192	2	0	612	6	913						0		
8:00 AM	8	4	1	4	9	18	18	219	1	0	714	3	998						0		
8:15 AM	5	1	1	2	1	15	10	188	3	0	650	2	878						0		
8:30 AM	5	1	0	1	1	11	5	159	3	0	652	0	836						0		
8:45 AM	2	0	1	0	2	16	5	134	0	0	531	1	692						0		
9:00 AM	2	2	0	1	2	11	6	149	2	0	427	0	601						0		
9:15 AM	0	1	1	0	1	9	1	144	1	0	358	1	517						0		
9:30 AM	2	2	1	2	3	6	9	154	0	0	317	2	498						0		
9:45 AM	3	1	0	0	0	9	3	130	6	0	355	4	511						0		
VOLUMES	59	45	12	23	37	190	120	1,966	23	0	6,460	32	8,966						0		
APPROACH %	51%	39%	10%	9%	15%	76%	6%	93%	1%	0%	100%	0%							0		
APP/DEPART	116	/	197	250	/	60	2,108	/	2,001	6,492	/	6,709	0						0		
BEGIN PEAK HR	7:30 AM																				0
VOLUMES	35	29	3	16	24	88	71	817	7	0	2,646	16	3,751						0		
APPROACH %	52%	44%	5%	13%	19%	69%	8%	91%	1%	0%	99%	1%							0		
PEAK HR FACTOR	0.520			0.759			0.942			0.929			0.940								0
APP/DEPART	67	/	116	128	/	31	895	/	836	2,662	/	2,768	0						0		
03:00 PM	1	5	0	1	6	7	12	353	0	3	190	4	581						0		
3:15 PM	1	4	1	6	3	8	21	313	2	0	189	2	549						0		
3:30 PM	0	2	3	1	2	21	12	395	3	0	185	1	624						0		
3:45 PM	3	0	2	2	0	8	10	373	1	0	178	4	579						0		
4:00 PM	2	6	0	2	0	10	5	426	2	0	186	3	641						0		
4:15 PM	3	8	0	2	1	8	4	414	6	0	171	1	617						0		
4:30 PM	1	8	0	3	2	12	2	501	0	0	160	4	691						0		
4:45 PM	0	8	1	4	2	7	1	555	2	5	176	4	764						0		
5:00 PM	0	4	3	1	3	11	2	557	1	1	219	2	803						0		
5:15 PM	2	2	1	1	2	11	2	590	2	1	173	5	791						0		
5:30 PM	2	10	1	1	0	7	6	649	5	1	220	3	905						0		
5:45 PM	1	5	1	2	5	13	5	583	0	1	135	3	753						0		
VOLUMES	16	61	13	26	24	121	82	5,706	24	11	2,180	36	8,298						0		
APPROACH %	17%	68%	15%	15%	14%	71%	1%	98%	0%	0%	98%	2%							0		
APP/DEPART	89	/	178	171	/	59	5,811	/	5,745	2,227	/	2,316	0						0		
BEGIN PEAK HR	4:45 PM																				0
VOLUMES	4	24	6	7	7	36	11	2,350	10	8	787	14	3,263						0		
APPROACH %	12%	70%	18%	14%	13%	73%	0%	99%	0%	1%	97%	2%							0		
PEAK HR FACTOR	0.670			0.825			0.898			0.902			0.902								0
APP/DEPART	34	/	49	50	/	24	2,371	/	2,363	809	/	827	0						0		





City Of Los Angeles
 Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

PCE ADJUSTED

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

STREET: North / South Monterey
 East/West Huntington

Day: Tuesday, May 15, 2018 Weather Sunny

Hours:

School Day: Yes District I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	40	137	290	206
BIKES	0	0	0	0
BUSES	3	37	86	73

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	69	7:30:00 AM	276	8:00:00 AM	231	7:45:00 AM	568	8:30:00 AM
PM PK 15 MIN	36	4:45:00 PM	130	5:45:00 PM	672	5:30:00 PM	189	5:00:00 PM
AM PK HOUR	223	7:30:00 AM	982	7:30:00 AM	836	7:30:00 AM	2098	7:45:00 AM
PM PK HOUR	124	3:00:00 PM	481	5:00:00 PM	2434	5:00:00 PM	647	5:00:00 PM

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	43	154	2	199
8-9	27	138	3	167
9-10	32	60	9	101
3-4	17	100	7	124
4-5	27	77	8	112
5-6	20	78	10	108
TOTAL	166	606	39	810

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	189	86	546	821
8-9	263	67	634	964
9-10	176	62	368	605
3-4	161	85	184	430
4-5	180	88	188	455
5-6	190	87	205	481
TOTAL	1157	474	2123	3754

TOTAL

N-S	XING S/L		XING N/L	
	Ped	Sch	Ped	Sch
1020	0	0	0	0
1131	0	0	0	0
705	0	0	0	0
553	0	0	0	0
567	0	0	0	0
589	0	0	0	0
4564	0	0	0	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	214	477	16	707
8-9	208	461	31	700
9-10	174	398	15	586
3-4	362	1031	17	1409
4-5	485	1382	20	1886
5-6	671	1741	22	2434
TOTAL	2112	5489	120	7720

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	1	1924	35	1960
8-9	3	1911	56	1969
9-10	4	1064	68	1136
3-4	3	548	70	620
4-5	9	510	66	585
5-6	12	549	87	647
TOTAL	32	6504	381	6916

TOTAL

E-W	XING W/L		XING E/L	
	Ped	Sch	Ped	Sch
2666	0	0	0	0
2669	0	0	0	0
1722	0	0	0	0
2029	0	0	0	0
2471	0	0	0	0
3081	0	0	0	0
14636	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: 5/15/18 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	El Sereno Monterey Huntington	PROJECT #: SC1734
			LOCATION #: 2
			CONTROL: SIGNAL

PCE Adjusted	NOTES:								AM PM MD OTHER DTMED	▲ N ◀ W S ▶ E ▼
	Class	1	2	3	4	5	6			
	Factor	1	1.5	2	3	2	2			

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL 1	NT 0.5	NR 0.5	SL 0.5	ST 0.5	SR 2	EL 1	ET 3	ER 0	WL 1	WT 3	WR 1		NB	SB	EB	WB	TTL

7:00 AM	11	28	0	40	20	120	31	81	4	0	472	10	816					0
7:15 AM	9	30	0	53	24	127	42	104	5	0	491	5	888					0
7:30 AM	14	55	0	47	20	184	69	138	3	1	457	14	999					0
7:45 AM	9	43	2	49	23	116	72	155	4	0	505	7	983					0
8:00 AM	9	36	0	78	22	177	60	141	3	1	520	14	1,060					0
8:15 AM	7	48	1	76	16	178	61	117	15	0	475	9	1,001					0
8:30 AM	3	29	0	51	17	145	42	114	10	2	549	17	976					0
8:45 AM	8	25	2	60	13	136	47	89	3	0	367	16	764					0
9:00 AM	12	11	4	48	11	112	38	110	2	0	299	18	662					0
9:15 AM	6	20	1	40	19	84	53	92	3	0	274	22	611					0
9:30 AM	11	17	2	34	15	76	42	106	7	0	251	12	570					0
9:45 AM	3	13	3	55	17	97	42	91	4	4	241	17	584					0
VOLUMES	102	352	14	627	215	1,548	595	1,335	62	8	4,898	159	9,912	0	0	0	0	0
APPROACH %	22%	75%	3%	26%	9%	65%	30%	67%	3%	0%	97%	3%						
APP/DEPART	467	/	1,105	2,389	/	285	1,992	/	1,976	5,064	/	6,547	0					
BEGIN PEAK HR	7:30 AM																	
VOLUMES	39	181	3	249	80	653	261	550	25	2	1,956	44	4,042					
APPROACH %	17%	81%	1%	25%	8%	67%	31%	66%	3%	0%	98%	2%						
PEAK HR FACTOR	0.814																	
APP/DEPART	223	/	486	982	/	107	836	/	802	2,002	/	2,648	0					
03:00 PM	2	28	2	42	17	53	87	252	6	0	145	18	651					0
3:15 PM	5	25	1	31	25	42	96	227	4	1	135	20	608					0
3:30 PM	7	23	3	42	22	43	83	301	3	0	140	14	680					0
3:45 PM	4	24	1	47	22	46	97	251	4	2	129	18	643					0
4:00 PM	5	14	2	41	28	45	103	280	4	2	142	11	675					0
4:15 PM	12	14	2	48	22	35	122	334	8	0	132	20	748					0
4:30 PM	2	23	4	41	20	49	113	386	5	4	120	18	784					0
4:45 PM	9	27	0	50	19	59	147	383	3	3	117	17	832					0
5:00 PM	2	16	2	54	19	50	155	400	4	3	170	16	890					0
5:15 PM	7	23	2	44	15	46	156	415	5	2	123	25	862					0
5:30 PM	8	24	3	43	28	53	186	483	3	2	146	22	999					0
5:45 PM	3	16	3	50	25	56	175	444	10	5	110	24	919					0
VOLUMES	64	255	25	530	259	576	1,517	4,154	58	24	1,606	222	9,288	0	0	0	0	0
APPROACH %	19%	74%	7%	39%	19%	42%	26%	73%	1%	1%	87%	12%						
APP/DEPART	344	/	1,993	1,365	/	341	5,728	/	4,709	1,852	/	2,246	0					
BEGIN PEAK HR	5:00 PM																	
VOLUMES	20	78	10	190	87	205	671	1,741	22	12	549	87	3,669					
APPROACH %	19%	72%	9%	39%	18%	43%	28%	72%	1%	2%	85%	13%						
PEAK HR FACTOR	0.783																	
APP/DEPART	108	/	835	481	/	121	2,434	/	1,941	647	/	773	0					





City Of Los Angeles
 Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

PCE ADJUSTED

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

STREET: North / South Monterey
 East/West Browne

Day: Tuesday, May 15, 2018 Weather Sunny

Hours:

School Day: Yes District I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	2	5	5	4
BIKES	0	0	0	0
BUSES	0	0	0	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	5	8:00:00 AM	3	8:15:00 AM	11	7:45:00 AM	6	7:30:00 AM
PM PK 15 MIN	5	5:30:00 PM	3	5:00:00 PM	8	5:45:00 PM	4	5:15:00 PM
AM PK HOUR	13	7:15:00 AM	6	8:00:00 AM	32	7:30:00 AM	17	7:15:00 AM
PM PK HOUR	12	5:00:00 PM	8	4:15:00 PM	14	3:00:00 PM	11	5:00:00 PM

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	8	0	0	8
8-9	7	0	0	7
9-10	6	0	0	6
3-4	8	0	1	9
4-5	6	0	0	6
5-6	12	0	0	12
TOTAL	47	0	1	47

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	1	1
8-9	0	0	6	6
9-10	0	0	5	5
3-4	0	0	5	5
4-5	0	0	6	6
5-6	0	0	4	4
TOTAL	0	0	27	27

TOTAL

N-S	XING S/L		XING N/L	
	Ped	Sch	Ped	Sch
9	0	0	0	0
13	0	0	0	0
11	0	0	0	0
14	0	0	0	0
12	0	0	0	0
16	0	0	0	0
TOTAL	0	0	0	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	14	9	6	29
8-9	9	2	3	14
9-10	1	1	3	5
3-4	6	4	4	14
4-5	5	1	1	7
5-6	4	5	4	12
TOTAL	39	21	20	80

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	17	0	17
8-9	0	6	0	6
9-10	0	2	0	2
3-4	0	7	0	7
4-5	0	4	0	4
5-6	0	11	0	11
TOTAL	0	46	0	46

TOTAL

E-W	XING W/L		XING E/L	
	Ped	Sch	Ped	Sch
46	0	0	0	0
20	0	0	0	0
7	0	0	0	0
21	0	0	0	0
11	0	0	0	0
23	0	0	0	0
TOTAL	0	0	0	0

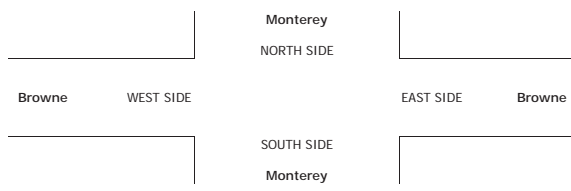
INTERSECTION TURNING MOVEMENT COUNTS
 PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 5/15/18 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	El Sereno Monterey Browne	PROJECT #: SC1734
			LOCATION #: 3
			CONTROL: SIGNAL

PCE Adjusted	NOTES:								PM PM MD OTHER DTMED	▲ N ◀ W S ▼	E ▶
	Class	1	2	3	4	5	6	7			
	Factor	1	1.5	2	3	2	2	2			

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL
	1	1	0	1	2.5	0.5	0	1	0	0	0	1	0	0	0	0	0	0

AM	7:00 AM	0	0	0	0	0	0	1	0	0	0	3	0	4					
	7:15 AM	2	0	0	0	0	0	2	2	3	0	5	0	14					
	7:30 AM	3	0	0	0	0	0	8	1	1	0	6	0	19					
	7:45 AM	3	0	0	0	0	1	3	6	2	0	3	0	18					
	8:00 AM	5	0	0	0	0	2	0	2	2	0	3	0	14					
	8:15 AM	1	0	0	0	0	3	6	0	1	0	1	0	12					
	8:30 AM	1	0	0	0	0	0	0	0	0	0	2	0	3					
	8:45 AM	0	0	0	0	0	1	3	0	0	0	0	0	4					
	9:00 AM	0	0	0	0	0	1	0	0	0	0	1	0	2					
	9:15 AM	1	0	0	0	0	2	0	0	0	0	0	0	3					
	9:30 AM	3	0	0	0	0	1	0	0	0	0	0	0	4					
	9:45 AM	2	0	0	0	0	2	1	1	3	0	1	0	9					
	VOLUMES	21	0	0	0	0	12	24	12	12	0	25	0	104	0	0	0	0	0
	APPROACH %	100%	0%	0%	0%	0%	100%	51%	24%	24%	0%	100%	0%						
	APP/DEPART	21	/	24	12	/	12	47	/	12	25	/	57	0					
BEGIN PEAK HR	7:15 AM																		
VOLUMES	13	0	0	0	0	3	13	11	8	0	17	0	64						
APPROACH %	100%	0%	0%	0%	0%	100%	41%	33%	25%	0%	100%	0%							
PEAK HR FACTOR	0.694		0.375				0.750			0.708			0.842						
APP/DEPART	13	/	13	3	/	8	32	/	11	17	/	33	0						
PM	03:00 PM	4	0	0	0	0	3	2	2	2	0	3	0	16					
	3:15 PM	2	0	0	0	0	1	0	0	0	0	2	0	5					
	3:30 PM	1	0	1	0	0	2	1	2	0	0	1	0	7					
	3:45 PM	1	0	0	0	0	0	3	0	2	0	1	0	7					
	4:00 PM	0	0	0	0	0	1	1	0	0	0	3	0	5					
	4:15 PM	5	0	0	0	0	1	1	1	0	0	1	0	9					
	4:30 PM	0	0	0	0	0	2	1	0	0	0	0	0	3					
	4:45 PM	1	0	0	0	0	2	2	0	1	0	0	0	6					
	5:00 PM	1	0	0	0	0	3	0	0	0	0	3	0	6					
	5:15 PM	2	0	0	0	0	0	1	1	2	0	4	0	10					
	5:30 PM	5	0	0	0	0	0	0	1	0	0	3	0	9					
	5:45 PM	4	0	0	0	0	1	3	3	2	0	1	0	14					
	VOLUMES	26	0	1	0	0	15	15	10	9	0	22	0	95	0	0	0	0	0
	APPROACH %	98%	0%	2%	0%	0%	100%	45%	29%	26%	0%	100%	0%						
	APP/DEPART	27	/	15	15	/	9	33	/	10	22	/	62	0					
BEGIN PEAK HR	5:00 PM																		
VOLUMES	12	0	0	0	0	4	4	5	4	0	11	0	38						
APPROACH %	100%	0%	0%	0%	0%	100%	33%	38%	29%	0%	100%	0%							
PEAK HR FACTOR	0.600		0.350				0.400			0.656			0.704						
APP/DEPART	12	/	4	4	/	4	12	/	5	11	/	26	0						





City Of Los Angeles
 Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

PCE ADJUSTED

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

STREET: North / South Monterey
 East/West Huntington

Day: Tuesday, May 15, 2018 Weather Sunny

Hours:

School Day: Yes District I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	113	130	46	34
BIKES	0	0	0	0
BUSES	18	15	17	35

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	132	7:30:00 AM	276	8:00:00 AM	60	7:45:00 AM	75	7:30:00 AM
PM PK 15 MIN	228	5:30:00 PM	131	4:45:00 PM	56	3:00:00 PM	64	5:30:00 PM
AM PK HOUR	472	7:30:00 AM	991	7:30:00 AM	192	7:30:00 AM	259	7:30:00 AM
PM PK HOUR	824	5:00:00 PM	481	4:45:00 PM	169	3:00:00 PM	231	5:00:00 PM

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	40	347	6	393
8-9	41	345	8	394
9-10	21	265	10	296
3-4	49	448	26	522
4-5	48	560	14	622
5-6	67	734	24	824
TOTAL	264	2698	88	3049

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	5	755	56	816
8-9	11	910	34	954
9-10	5	547	27	579
3-4	8	352	48	407
4-5	13	390	52	455
5-6	18	411	49	478
TOTAL	60	3364	265	3688

TOTAL

N-S	XING S/L		XING N/L	
	Ped	Sch	Ped	Sch
1208	0	0	0	0
1348	0	0	0	0
875	0	0	0	0
929	0	0	0	0
1076	0	0	0	0
1302	0	0	0	0
6737	0	0	0	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	69	55	50	173
8-9	61	47	38	146
9-10	51	28	40	119
3-4	61	52	56	169
4-5	58	54	45	157
5-6	59	46	40	145
TOTAL	359	280	269	907

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	11	99	108	217
8-9	13	74	115	202
9-10	15	43	89	147
3-4	18	61	91	170
4-5	19	66	114	199
5-6	26	71	135	231
TOTAL	102	413	651	1165

TOTAL

E-W	XING W/L		XING E/L	
	Ped	Sch	Ped	Sch
390	0	0	0	0
348	0	0	0	0
265	0	0	0	0
339	0	0	0	0
356	0	0	0	0
376	0	0	0	0
2072	0	0	0	0

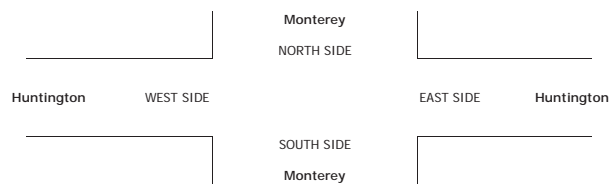
INTERSECTION TURNING MOVEMENT COUNTS
 PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: 5/15/18 TUESDAY	LOCATION: NORTH & SOUTH: EAST & WEST:	El Sereno Monterey Huntington	PROJECT #: SC1734
			LOCATION #: 3
			CONTROL: SIGNAL

PCE Adjusted	NOTES:								PM PM MD OTHER OTHER	▲ N ← W S ▼	E ▶
	Class	1	2	3	4	5	6				
	Factor	1	1.5	2	3	2	2				

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS				
	Monterey			Monterey			Huntington			Huntington				NB	SB	EB	WB	TTL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR						

7:00 AM	3	66	0	0	163	9	15	8	15	3	19	18	317							0			
7:15 AM	5	66	3	0	192	11	19	5	7	2	17	21	347							0			
7:30 AM	18	112	2	2	234	14	16	18	12	4	32	40	502							0			
7:45 AM	14	104	1	3	167	22	20	24	16	2	31	29	432							0			
8:00 AM	12	91	3	7	262	7	27	17	9	3	29	37	503							0			
8:15 AM	6	108	3	2	252	13	14	14	7	3	19	31	477							0			
8:30 AM	12	73	1	2	198	6	14	12	8	5	17	27	373							0			
8:45 AM	11	75	1	0	192	8	6	5	15	2	10	20	343							0			
9:00 AM	7	57	4	0	156	11	12	3	10	5	12	17	290							0			
9:15 AM	7	86	1	0	227	8	15	10	8	8	14	31	311							0			
9:30 AM	5	61	1	3	111	3	16	8	11	3	10	22	252							0			
9:45 AM	3	63	4	2	154	6	9	7	13	0	8	20	288							0			
VOLUMES	101	957	24	21	2,212	117	181	129	128	39	216	311	4,432							0			
APPROACH %	9%	88%	2%	1%	94%	5%	41%	30%	29%	7%	38%	55%								0			
APP/DEPART	1,082	/	1,448	2,349	/	2,378	437	/	174	565	/	433	0							0			
BEGIN PEAK HR	7:30 AM																						
VOLUMES	50	414	9	14	922	56	77	72	43	12	111	137	1,913							0			
APPROACH %	10%	88%	2%	1%	93%	6%	40%	38%	22%	5%	43%	53%								0			
PEAK HR FACTOR	0.894			0.899														0.805		0.863		0.952	
APP/DEPART	472	/	627	991	/	977	192	/	95	259	/	216	0							0			
03:00 PM	8	117	4	1	86	9	21	19	17	7	22	25	335							0			
3:15 PM	23	107	8	3	78	16	15	11	16	3	13	31	322							0			
3:30 PM	10	100	9	2	84	11	12	10	17	6	11	15	285							0			
3:45 PM	8	124	5	2	104	13	14	12	7	2	15	21	327							0			
4:00 PM	18	107	3	2	98	11	13	16	10	6	16	31	330							0			
4:15 PM	10	138	3	6	87	13	18	14	15	3	28	24	357							0			
4:30 PM	7	143	4	1	95	11	17	13	10	4	12	34	350							0			
4:45 PM	13	173	4	4	110	17	11	11	10	7	11	26	396							0			
5:00 PM	19	161	5	6	107	12	9	14	11	5	15	34	397							0			
5:15 PM	22	177	3	5	93	9	17	13	11	0	23	37	408							0			
5:30 PM	13	206	9	5	103	11	18	13	11	10	16	38	452							0			
5:45 PM	13	191	7	2	109	18	16	6	8	11	17	26	422							0			
VOLUMES	163	1,741	64	39	1,152	149	178	151	141	63	198	340	4,377							0			
APPROACH %	8%	89%	3%	3%	86%	11%	38%	32%	30%	11%	33%	57%								0			
APP/DEPART	1,967	/	2,259	1,340	/	1,356	470	/	254	600	/	509	0							0			
BEGIN PEAK HR	5:00 PM																						
VOLUMES	67	734	24	18	411	49	59	46	40	26	71	135	1,678							0			
APPROACH %	8%	89%	3%	4%	86%	10%	41%	32%	28%	11%	31%	58%								0			
PEAK HR FACTOR	0.905			0.934														0.873		0.902		0.928	
APP/DEPART	824	/	927	478	/	477	145	/	88	231	/	186	0							0			



INTERSECTION TURNING MOVEMENT COUNTS

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

T218

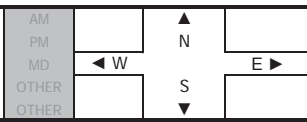
DATE:
Tue, May 15, 18

LOCATION:
NORTH & SOUTH:
EAST & WEST:

El Sereno
Mckenzie
Victorine

PROJECT #: SC1734
LOCATION #: 7
CONTROL: STOP ALL

NOTES:



Add U-Turns to Left Turns

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

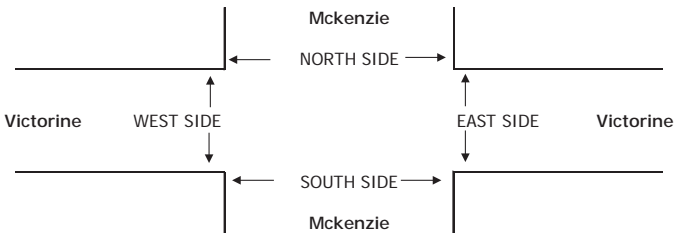
U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

AM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	2	0	1	0	2	0	0	0	3	3	1	1	13
7:15 AM	0	3	3	0	7	0	0	0	1	3	0	0	17
7:30 AM	1	1	7	2	3	1	0	0	4	8	0	1	28
7:45 AM	5	3	12	0	10	0	1	0	4	13	0	0	48
8:00 AM	2	4	4	0	6	1	0	0	5	5	1	0	28
8:15 AM	2	1	0	0	2	0	0	0	0	1	0	0	6
8:30 AM	2	1	0	0	3	0	0	0	0	0	1	0	7
8:45 AM	1	2	1	0	1	0	1	0	3	2	0	0	11
VOLUMES	15	15	28	2	34	2	2	0	20	35	3	2	158
APPROACH %	26%	26%	48%	5%	89%	5%	9%	0%	91%	88%	8%	5%	
APP/DEPART	58	/	19	38	/	93	22	/	31	40	/	15	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	8	11	26	2	26	2	1	0	14	29	1	1	121
APPROACH %	18%	24%	58%	7%	87%	7%	7%	0%	93%	94%	3%	3%	
PEAK HR FACTOR	0.563			0.750			0.750			0.596			0.630
APP/DEPART	45	/	13	30	/	72	15	/	28	31	/	8	0

NB	SB	EB	WB	TTL
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
2	0	0	0	2
0	0	0	0	0
1	0	0	1	2
1	0	0	0	1
0	0	0	0	0
5	0	0	1	6

PM	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	2	1	0	2	5	0	0	0	1	3	0	2	16
4:15 PM	2	1	0	0	5	0	0	0	0	0	1	0	9
4:30 PM	1	4	1	0	4	0	0	0	0	2	0	0	12
4:45 PM	1	2	1	0	2	1	0	0	4	2	1	0	14
5:00 PM	3	2	1	0	5	0	0	0	1	0	0	1	13
5:15 PM	2	1	0	0	3	0	0	0	2	3	0	0	11
5:30 PM	2	3	1	1	3	1	0	0	2	0	3	1	17
5:45 PM	3	6	0	1	5	1	0	0	2	1	0	2	21
VOLUMES	16	20	4	4	32	3	0	0	12	11	5	6	113
APPROACH %	40%	50%	10%	10%	82%	8%	0%	0%	100%	50%	23%	27%	
APP/DEPART	40	/	26	39	/	58	12	/	8	22	/	21	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	10	12	2	2	16	2	0	0	7	4	3	4	62
APPROACH %	42%	50%	8%	10%	80%	10%	0%	0%	100%	36%	27%	36%	
PEAK HR FACTOR	0.667			0.714			0.875			0.688			0.738
APP/DEPART	24	/	16	20	/	28	7	/	4	11	/	14	0

NB	SB	EB	WB	TTL
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	0	0	0
0	0	0	0	0
3	0	0	0	3



AM	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
AM BEGIN PEAK HR	7:15 AM				

PM	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM BEGIN PEAK HR	5:00 PM				

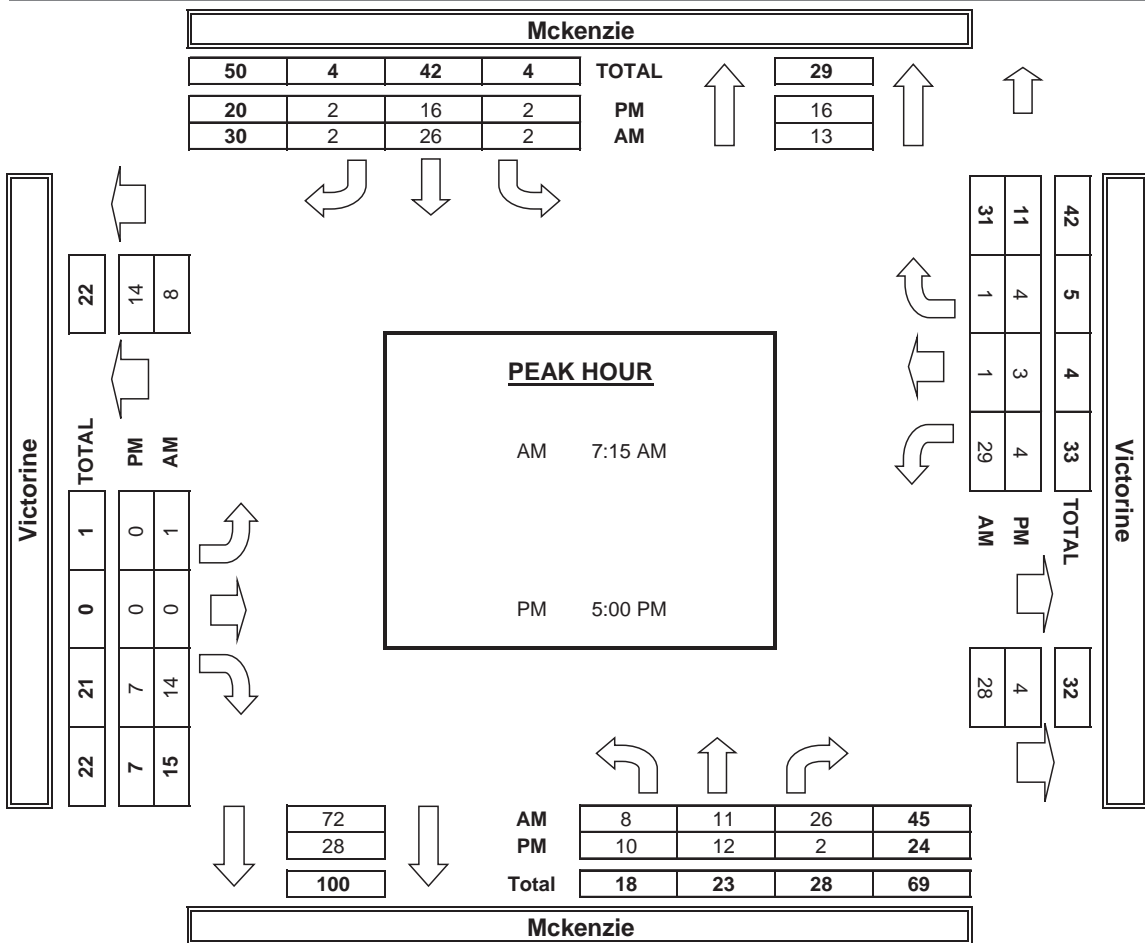
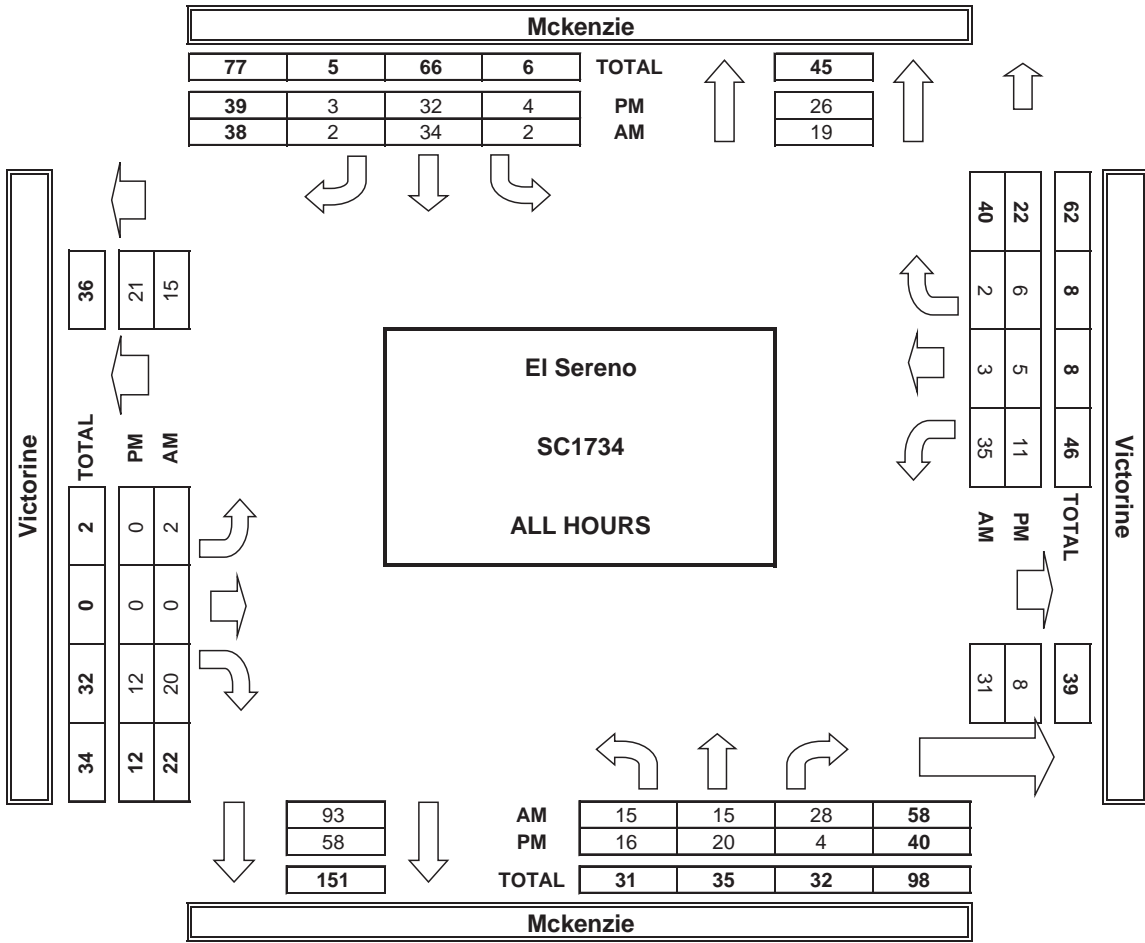
AM	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
AM BEGIN PEAK HR	7:15 AM				

PM	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM BEGIN PEAK HR	5:00 PM				

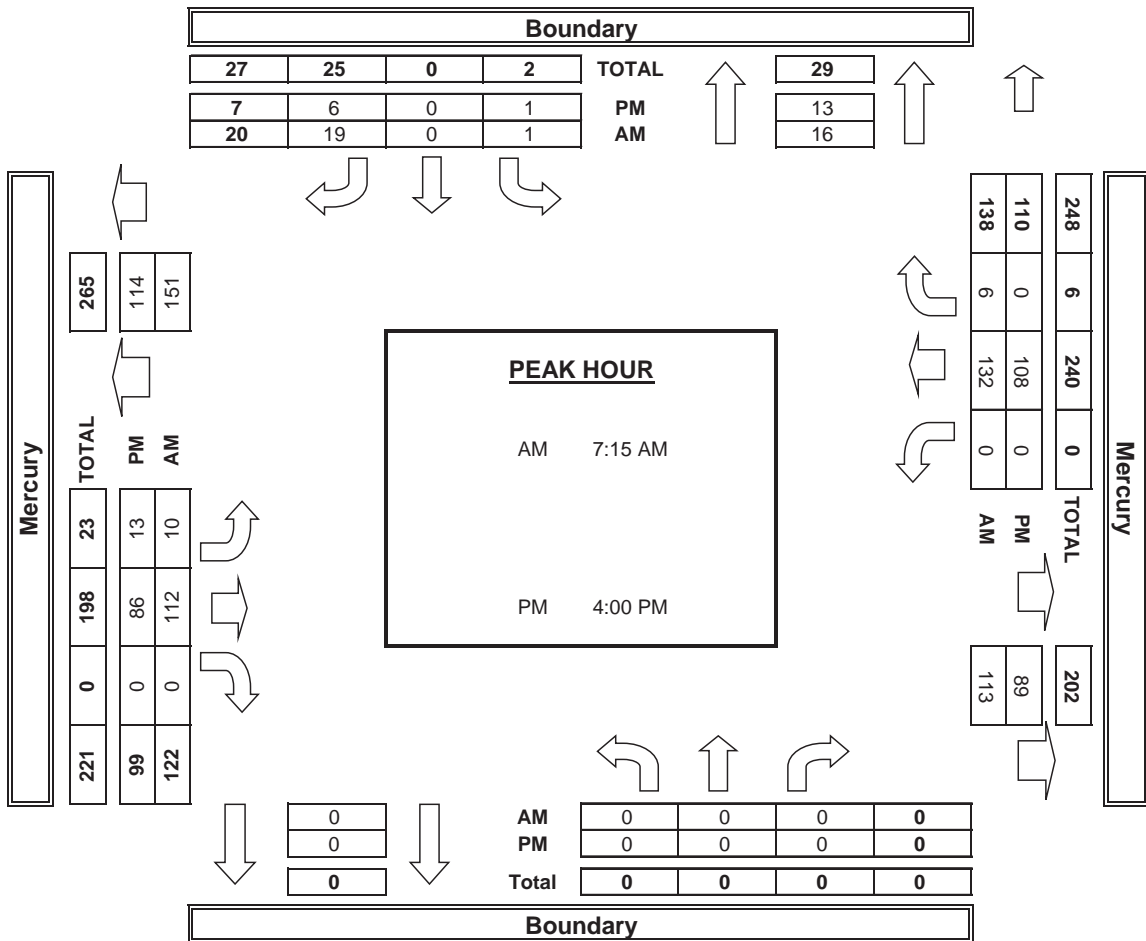
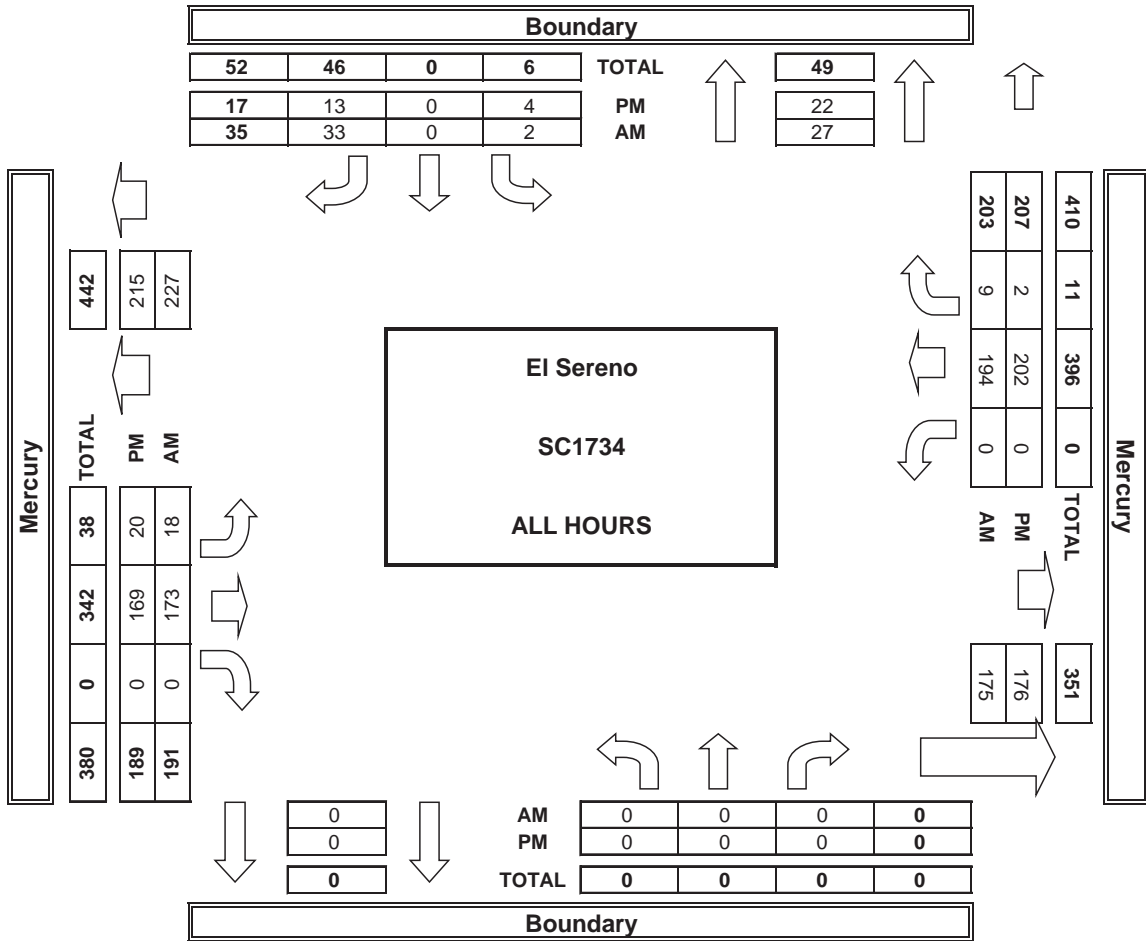
AM	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
AM BEGIN PEAK HR	7:15 AM				

PM	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM BEGIN PEAK HR	5:00 PM				

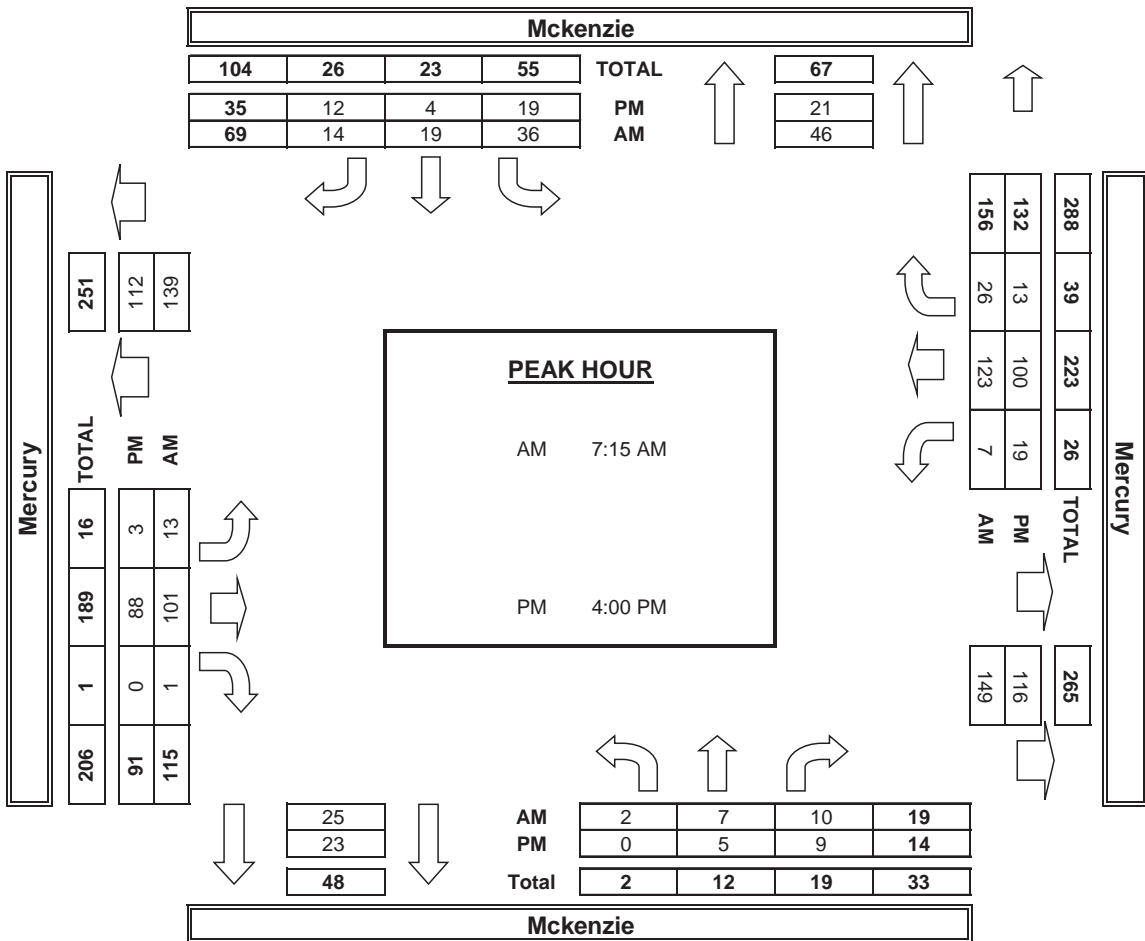
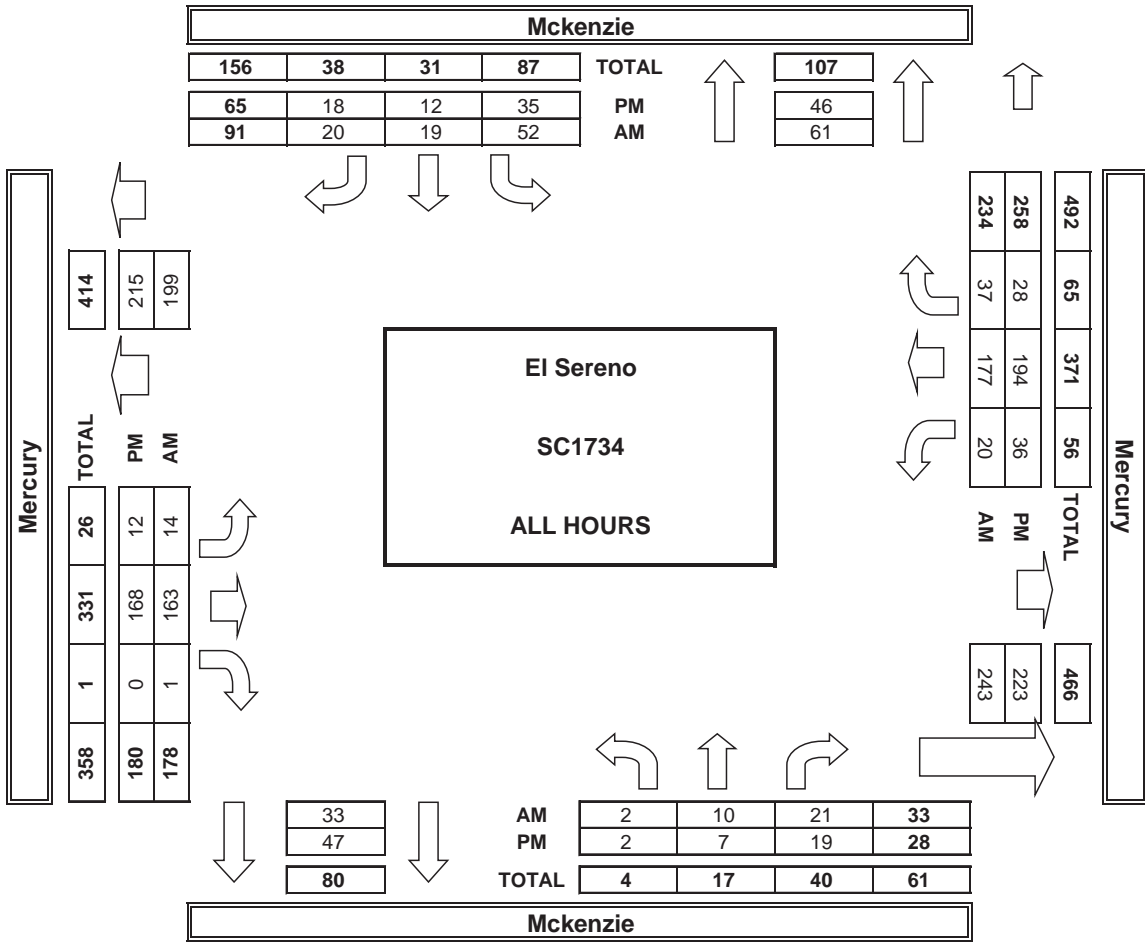
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INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:
Tue, May 15, 18

LOCATION:
NORTH & SOUTH:
EAST & WEST:

El Sereno
Huntington
Mercury

PROJECT #: SC1734
LOCATION #: 4
CONTROL: STOP ALL

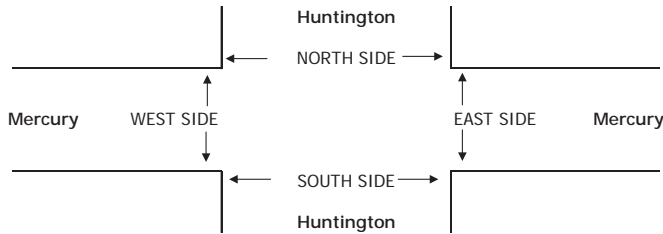
<p>NOTES:</p>	AM PM MD OTHER OTHER	▲ N ◀ W E ▶ S ▼	
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Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Huntington			Huntington			Mercury			Mercury			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	1	5	0	0	5	17	31	0	2	0	1	0	62
7:15 AM	0	12	0	1	10	23	27	1	1	0	0	0	75
7:30 AM	1	7	0	0	16	36	29	0	7	0	0	0	96
7:45 AM	4	15	0	0	23	53	39	0	3	0	0	0	137
8:00 AM	2	18	0	0	16	36	42	0	0	0	0	1	115
8:15 AM	1	7	0	0	12	19	19	0	1	0	0	0	59
8:30 AM	1	7	0	1	10	21	16	0	3	0	0	0	59
8:45 AM	0	7	0	2	3	15	17	0	1	0	1	0	46
VOLUMES	10	78	0	4	95	220	220	1	18	0	2	1	649
APPROACH %	11%	89%	0%	1%	30%	69%	92%	0%	8%	0%	67%	33%	
APP/DEPART	88	/	301	319	/	113	239	/	3	3	/	232	0
BEGIN PEAK HR	7:15 AM												
VOLUMES	7	52	0	1	65	148	137	1	11	0	0	1	423
APPROACH %	12%	88%	0%	0%	30%	69%	92%	1%	7%	0%	0%	100%	
PEAK HR FACTOR	0.738			0.704			0.887			0.250			0.772
APP/DEPART	59	/	191	214	/	76	149	/	1	1	/	155	0
4:00 PM	1	12	0	0	6	32	25	1	1	0	0	0	78
4:15 PM	0	9	0	0	9	39	37	0	0	0	0	0	94
4:30 PM	0	7	0	0	8	26	26	0	2	0	1	1	71
4:45 PM	0	9	0	0	6	33	21	0	2	0	0	0	71
5:00 PM	1	5	0	0	7	28	24	0	2	0	0	0	67
5:15 PM	1	4	0	1	5	40	34	0	1	0	0	0	86
5:30 PM	1	7	0	0	10	25	24	0	1	0	0	1	69
5:45 PM	1	8	0	0	9	27	19	0	2	0	0	0	66
VOLUMES	5	61	0	1	60	250	210	1	11	0	1	2	602
APPROACH %	8%	92%	0%	0%	19%	80%	95%	0%	5%	0%	33%	67%	
APP/DEPART	66	/	273	311	/	71	222	/	1	3	/	257	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	1	37	0	0	29	130	109	1	5	0	1	1	314
APPROACH %	3%	97%	0%	0%	18%	82%	95%	1%	4%	0%	50%	50%	
PEAK HR FACTOR	0.731			0.828			0.777			0.250			0.835
APP/DEPART	38	/	147	159	/	34	115	/	1	2	/	132	0

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
0	1	0	0	1
0	2	0	0	2

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

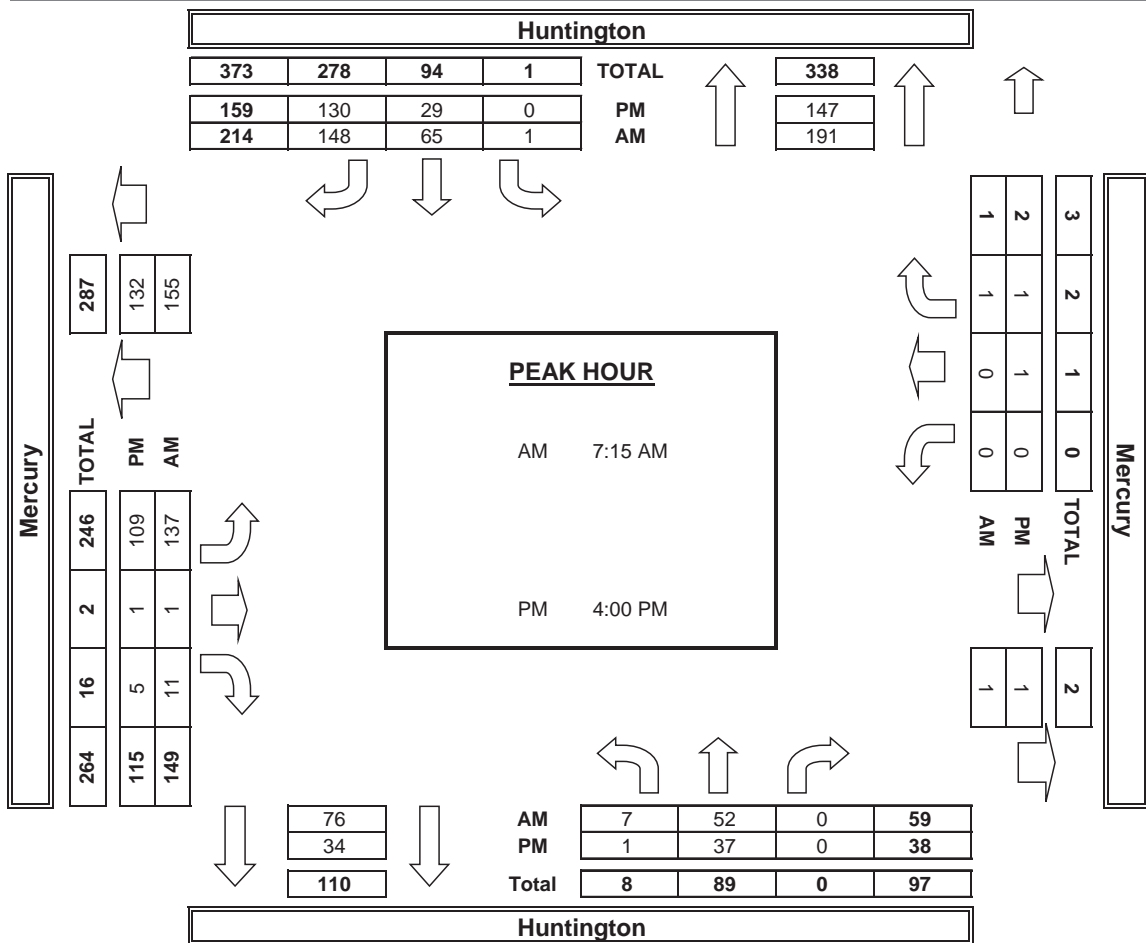
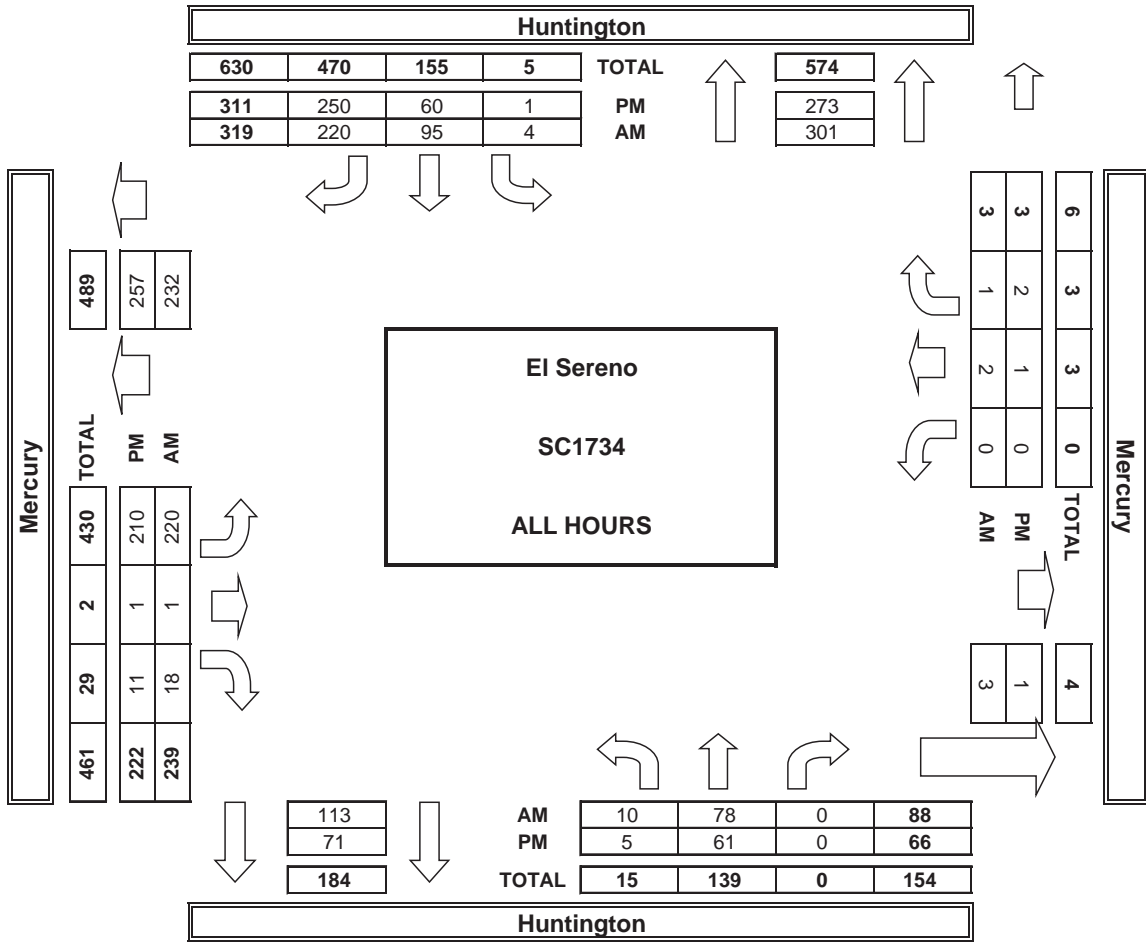


	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
AM BEGIN PEAK HR	7:15 AM				
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM BEGIN PEAK HR	4:00 PM				

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
AM BEGIN PEAK HR	7:15 AM				
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM BEGIN PEAK HR	4:00 PM				

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0
TOTAL	0	0	0	0	0
AM BEGIN PEAK HR	7:15 AM				
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM BEGIN PEAK HR	4:00 PM				

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TURNING MOVEMENT COUNTS



APPENDIX C
LADOT CMA Level of Service
Worksheets

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:		Topaz Street		Year of Count:		Ambient Growth: (%)		Conducted by:		Date:					
	East-West Street:	Huntington Drive	2018	2025	Peak Hour:	AM	KOA Corp	Ryland Lu	7/26/18	Rose Hills Housing Project						
1	No. of Phases		2		2		2		2		2					
	Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0		0		0		0		0					
Right Turns: FREE-1, NRTOR-2 or OLA-3?		0		0		0		0		0		0				
ATSAC-1 or ATSAC+ATCS-2?		0		0		0		0		0		0				
Override Capacity		0		0		0		0		0		0				
MOVEMENT		EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT			FUTURE CONDITION W/ PROJECT			FUTURE W/ PROJECT W/ MITIGATION		
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	Lane Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	35	0	35	0	35	0	35	0	38	0	38	0	38	0	38
	Left-Through															
	Through	29	0	29	0	29	0	31	0	31	0	31	0	31	0	72
	Through-Right															
	Right	3	0	3	0	3	0	3	0	3	0	3	0	3	0	0
SOUTHBOUND	Left-Through-Right		1				1								1	
	Left-Right		0				0								0	
	Left	16	0	16	0	16	0	17	0	17	0	17	0	17	0	17
	Left-Through															
	Through	24	0	24	0	24	0	26	0	26	0	26	0	26	0	141
EASTBOUND	Through-Right															
	Right	88	0	88	0	88	0	94	0	94	0	98	0	98	0	0
	Left-Through-Right		1				1								1	
	Left-Right		0				0								0	
	Left	71	0	71	1	72	0	76	0	76	0	77	0	77	0	77
WESTBOUND	Left-Through		1				1								1	
	Through	817	1	818	1	818	1	85	961	961	1	962	1	962	1	477
	Through-Right															
	Right	7	0	7	0	7	0	8	0	8	0	8	0	8	0	477
	Left-Through-Right															
CRITICAL VOLUMES	Left-Right		0				0								0	
	Left		0				0								0	
	Left-Through		0				0								0	
	Through	2646	2	2650	4	2650	4	92	2929	2929	2	2933	2	2933	2	983
	Through-Right		1				1								1	
VOLUME/CAPACITY (V/C) RATIO: LEVEL OF SERVICE (LOS):	Right	16	0	16	0	16	0	17	0	17	0	17	0	17	0	17
	Left-Through-Right															
	Left-Right		0				0								0	
	North-South:	163	167	167	175	175	175	179	179	179	179	179	179	179	179	179
	East-West:	958	961	961	1058	1058	1058	1060	1060	1060	1060	1060	1060	1060	1060	1060
SUM:	1121	1128	1128	1233	1233	1233	1239	1239	1239	1239	1239	1239	1239	1239	1239	
VOLUME/CAPACITY (V/C) RATIO:		0.747	0.752	0.752	0.822	0.822	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826	0.826
LEVEL OF SERVICE (LOS):		B	B	B	C	C	C	C	C	C	C	C	C	C	C	C

REMARKS:

Version: 1i Beta; 8/4/2011

EXISTING + PROJECT IMPACT

Change in v/c due to project: **0.005**
Significant impacted? **NO**

PROJECT IMPACT

Change in v/c due to project: **0.004**
Significant impacted? **NO**
Fully mitigated? **N/A**

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:		Topaz Street		Year of Count:		Ambient Growth: (%)		Conducted by:		Date:				
	East-West Street:	Huntington Drive	2018	2025	PM	1	KOA Corp	Ryland Lu	7/26/18	Rose Hills Housing Project					
No. of Phases															
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?															
Right Turns: FREE-1, NRTOR-2 or OLA-3?															
ATSAC-1 or ATSAC+ATCS-2?															
Override Capacity															
MOVEMENT	EXISTING CONDITION			EXISTING PLUS PROJECT			FUTURE CONDITION W/O PROJECT			FUTURE CONDITION W/ PROJECT			FUTURE W/ PROJECT W/ MITIGATION		
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	4	0	4	0	4	0	4	0	4	0	4	0	4	
	Left-Through		0		0		0		0	0	0		0		
	Through	24	0	24	0	24	0	26	0	26	0	26	0	36	
	Through-Right		0		0		0		0		0		0		
SOUTHBOUND	Right	6	0	6	0	6	0	6	0	6	0	6	0	0	
	Left-Through-Right		1		1		1		1		1		1		
	Left-Right		0		0		0		0		0		0		
	Left	7	0	7	0	7	0	8	0	8	0	8	0	8	
EASTBOUND	Left-Through		0		0		0		0		0		0		
	Through	7	0	7	0	7	0	8	0	8	0	8	0	55	
	Through-Right		0		0		0		0		0		0		
	Right	36	0	36	0	36	0	39	0	39	0	39	0	0	
WESTBOUND	Left-Through-Right		1		1		1		1		1		1		
	Left-Right		0		0		0		0		0		0		
	Left	11	0	11	0	11	0	12	0	12	0	12	0	0	
	Left-Through		0		0		0		0		0		0		
WESTBOUND	Through	2350	2	787	7	2357	105	2625	2	879	7	2632	2	881	
	Through-Right		1		1		1		1		1		1		
	Right	10	0	10	0	10	0	11	0	11	0	11	0	11	
	Left-Through-Right		0		0		0		0		0		0		
WESTBOUND	Left-Right		0		0		0		0		0		0		
	Left	8	0	8	0	8	0	9	0	9	0	9	0	9	
	Left-Through		1		1		1		1		1		1		
	Through	787	1	283	4	791	78	922	1	330	4	926	1	332	
WESTBOUND	Through-Right		1		1		1		1		1		1		
	Right	14	0	14	0	14	0	15	0	15	0	15	0	332	
	Left-Through-Right		0		0		0		0		0		0		
	Left-Right		0		0		0		0		0		0		
CRITICAL VOLUMES		North-South:	54	North-South:	54	North-South:	59	North-South:	59	North-South:	59	North-South:	59	59	
		East-West:	795	East-West:	797	East-West:	888	East-West:	890	East-West:	890	East-West:	890	890	
		SUM:	849	SUM:	851	SUM:	947	SUM:	949	SUM:	949	SUM:	949	949	
VOLUME/CAPACITY (V/C) RATIO:		0.566	0.567	0.567	0.631	0.631	0.633	0.633	0.533	0.533	0.533	0.533	0.533	0.533	
V/C LESS ATSAC/ATCS ADJUSTMENT:		0.466	0.467	0.467	0.531	0.531	0.533	0.533	A	A	A	A	A	A	
LEVEL OF SERVICE (LOS):		A	A	A	A	A	A	A	A	A	A	A	A	A	

REMARKS:

Version: 1i Beta; 8/4/2011

EXISTING + PROJECT IMPACT

Change in v/c due to project: **0.001**
Significant impacted? **NO**

PROJECT IMPACT

Change in v/c due to project: **0.002**
Significant impacted? **NO**
Fully mitigated? **N/A**

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:		Monterey Road		Year of Count:		Ambient Growth: (%)		Conducted by:		Date:	
	East-West Street:	Huntington Drive	2018	2025	Peak Hour:	AM	1	KOA Corp	Ryland Lu	7/26/18	Rose Hills Housing Project	
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity												
EXISTING PLUS PROJECT												
MOVEMENT	EXISTING CONDITION		EXISTING PLUS PROJECT		EXISTING PLUS PROJECT		EXISTING PLUS PROJECT		EXISTING PLUS PROJECT		EXISTING PLUS PROJECT	
	Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume
NORTHBOUND	Left	1	39	0	39	39	0	42	1	42	0	42
	Left-Through	0	181	0	181	184	0	194	0	194	0	194
	Through-Right	1	0	0	0	0	0	3	1	0	0	3
	Right	0	0	0	0	0	0	3	0	0	0	3
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND	Left	0	249	15	264	264	43	310	0	310	15	325
	Left-Through	1	329	0	80	344	0	86	1	411	0	86
	Through-Right	0	653	4	657	99	15	715	0	89	4	719
	Right	2	0	0	0	0	0	0	2	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0
EASTBOUND	Left	1	261	1	262	262	25	305	1	306	1	306
	Left-Through	0	550	0	550	192	60	650	0	226	0	650
	Through-Right	2	25	0	25	25	0	27	2	27	0	27
	Right	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0
WESTBOUND	Left	1	2	0	2	2	0	2	1	2	0	2
	Left-Through	0	1956	0	1956	652	77	2174	0	725	0	2174
	Through-Right	3	44	4	48	48	62	109	3	113	4	113
	Right	0	0	0	0	0	0	0	0	0	0	0
	Left-Through-Right	0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES			North-South: 433 East-West: 913 SUM: 1346	North-South: 507 East-West: 1030 SUM: 1537	North-South: 448 East-West: 914 SUM: 1362	North-South: 522 East-West: 1031 SUM: 1553	North-South: 522 East-West: 1031 SUM: 1553	North-South: 522 East-West: 1031 SUM: 1553	North-South: 522 East-West: 1031 SUM: 1553	North-South: 522 East-West: 1031 SUM: 1553	North-South: 522 East-West: 1031 SUM: 1553	North-South: 522 East-West: 1031 SUM: 1553
VOLUME/CAPACITY (V/C) RATIO:			0.945	1.079	0.956	1.079	0.956	1.079	0.956	1.079	0.956	1.079
LEVEL OF SERVICE (LOS):			D	E	D	E	D	E	D	E	D	E
V/C LESS ATSAC/ATCS ADJUSTMENT:			0.845	0.979	0.856	0.979	0.856	0.979	0.856	0.979	0.856	0.979
SUMMARY			0.845	0.979	0.856	0.979	0.856	0.979	0.856	0.979	0.856	0.979

REMARKS:

Version: 1i Beta; 8/4/2011

EXISTING + PROJECT IMPACT

Change in v/c due to project: **0.011**
Significant impacted? **NO**

PROJECT IMPACT

Change in v/c after mitigation: **0.011**
Significant impacted? **YES**
Fully mitigated? **NO**

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:		Monterey Road		Year of Count:		Ambient Growth: (%)		Conducted by:		Date:		
	East-West Street:	Huntington Drive	2018	2025	PM	Peak Hour:	1	KOA Corp	7/26/18	Project:	Rose Hills Housing Project		
No. of Phases			Projection Year:		FUTURE CONDITION W/O PROJECT		FUTURE CONDITION W/ PROJECT		FUTURE W/ PROJECT W/ MITIGATION				
Opposed Øing: N/S-1, E/W-2 or Both-3?			3		0		0		0		3		
Right Turns: FREE-1, NRTOR-2 or OLA-3?			0		0		0		0		0		
ATSAC-1 or ATSAC+ATCS-2?			0		0		0		0		0		
Override Capacity			0		0		0		0		0		
MOVEMENT			EXISTING CONDITION		EXISTING PLUS PROJECT		FUTURE CONDITION W/O PROJECT		FUTURE CONDITION W/ PROJECT		FUTURE W/ PROJECT W/ MITIGATION		
			Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
			20	1	20	0	21	1	21	0	21	1	21
NORTHBOUND													
Left-Through			78	0	88	0	84	0	95	0	84	0	95
Through-Right			10	0	0	0	11	0	0	0	11	0	0
Right			0	0	0	0	0	0	0	0	0	0	0
Left-Through-Right			0	0	0	0	0	0	0	0	0	0	0
Left-Right			0	0	0	0	0	0	0	0	0	0	0
SOUTHBOUND													
Left			190	0	199	9	253	0	253	49	262	0	262
Left-Through			87	0	277	0	93	0	346	0	93	0	93
Through-Right			205	2	0	4	246	2	0	26	250	2	0
Right			0	0	0	0	0	0	0	0	0	0	0
Left-Through-Right			0	0	0	0	0	0	0	0	0	0	0
Left-Right			0	0	0	0	0	0	0	0	0	0	0
EASTBOUND													
Left			671	1	678	7	739	1	739	20	746	1	746
Left-Through			1741	2	588	0	1953	2	659	86	1953	2	659
Through-Right			22	0	22	0	24	0	24	0	24	0	24
Right			0	0	0	0	0	0	0	0	0	0	0
Left-Through-Right			0	0	0	0	0	0	0	0	0	0	0
Left-Right			0	0	0	0	0	0	0	0	0	0	0
WESTBOUND													
Left			12	1	12	0	13	1	13	0	13	1	13
Left-Through			549	3	183	0	640	3	213	51	640	3	213
Through-Right			87	1	102	15	124	1	124	31	139	1	139
Right			0	0	0	0	0	0	0	0	0	0	0
Left-Through-Right			0	0	0	0	0	0	0	0	0	0	0
Left-Right			0	0	0	0	0	0	0	0	0	0	0
CRITICAL VOLUMES			North-South: 297	East-West: 854	306	North-South: 861	East-West: 1167	1319	367	North-South: 376	East-West: 959	1335	959
SUM:			1151	1151	1167	1167	1319	1319	1319	1335	1335	1335	1316
VOLUME/CAPACITY (V/C) RATIO:			0.808	0.708	0.819	0.926	0.826	0.926	0.937	0.837	0.924	0.824	0.824
LEVEL OF SERVICE (LOS):			C	C	C	D	D	D	D	D	D	D	D

REMARKS:

Version: 1i Beta; 8/4/2011

EXISTING + PROJECT IMPACT

Change in v/c due to project: **0.011**
Significant impacted? **NO**

PROJECT IMPACT

Change in v/c due to project: **0.011** Δv/c after mitigation: **-0.002**
Significant impacted? **NO** Fully mitigated? **N/A**

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:		Monterey Road		Year of Count:		Ambient Growth: (%)		Conducted by:		Date:					
	East-West Street:	Huntington Drive North/Browne Street	2018	2025	Peak Hour:	AM	1	KOA Corp	Ryland Lu	7/26/18	Rose Hills Housing Project					
No. of Phases		3		3		3		3		3		3				
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0		0		0		0		0		0				
Right Turns: FREE-1, NRTOR-2 or OLA-3?		2		2		2		2		2		2				
ATSAC-1 or ATSAC+ATCS-2?		0		0		0		0		0		0				
Override Capacity		0		0		0		0		0		0				
MOVEMENT		EXISTING CONDITION		EXISTING PLUS PROJECT		FUTURE CONDITION W/O PROJECT		FUTURE CONDITION W/ PROJECT		FUTURE W/ PROJECT W/ MITIGATION		FUTURE W/ PROJECT W/ MITIGATION				
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	62	1	62	6	68	1	66	0	66	1	66	0	66	1	66
	Left-Through		0				0		87	531	0	541	0	531	0	541
	Through	414	0	423	0	414	0	541	0	531	0	541	0	531	0	541
	Through-Right		1				1		0	10	0	0	0	10	0	0
	Right	9	0	0	0	9	0	0	0	10	0	0	0	10	0	0
SOUTHBOUND	Left-Through-Right		0				0				0				0	
	Left-Right		0				0				0				0	
	Left	14	1	14	0	14	1	15	0	15	1	15	0	15	1	15
	Left-Through		0				0		58	1047	2	371	0	1047	2	371
	Through	922	2	328	0	922	2	371	0	1047	2	371	0	1047	2	371
EASTBOUND	Through-Right		1				1		0	66	0	66	0	66	0	66
	Right	62	0	62	2	64	0	66	0	66	0	66	0	66	0	66
	Left-Through-Right		0				0				0				0	
	Left-Right		0				0				0				0	
	Left	94	0	94	7	101	0	101	0	101	0	101	7	108	0	108
WESTBOUND	Left-Through		0				0		0	87	0	268	0	87	0	268
	Through	81	0	224	0	81	0	241	0	87	0	268	0	87	0	268
	Through-Right		0				0		0	53	2	0	20	73	2	0
	Right	49	0	0	20	69	0	0	0	53	2	0	20	73	2	0
	Left-Through-Right		2				2				0				0	
CRITICAL VOLUMES	Left-Right		0				0				0				0	
	Left	12	0	12	0	12	0	13	0	13	0	13	0	13	0	13
	Left-Through		0				0		0	133	0	293	0	133	0	293
	Through	124	0	273	0	124	0	293	0	133	0	293	0	133	0	293
	Through-Right		0				0		0	147	0	0	0	147	0	0
VOLUME/CAPACITY (V/C) RATIO:	Right	137	0	0	0	137	0	0	0	147	0	0	0	147	0	0
	Left-Through-Right		1				1				1				1	
	Left-Right		0				0				0				0	
	North-South:	437	437	437	556	556	556	556	556	556	556	556	556	556	556	556
	East-West:	367	374	374	394	394	394	394	394	394	394	394	394	394	394	394
LEVEL OF SERVICE (LOS):	SUM:	804	811	811	950	950	950	950	950	950	950	950	950	950	950	950
	North-South:	0.564	0.569	0.569	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667	0.667
	East-West:	0.464	0.469	0.469	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567	0.567
	SUM:	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	North-South:	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622
REMARKS:	East-West:	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622
	SUM:	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622
	North-South:	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622
	East-West:	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622
	SUM:	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622	0.622

Level of Service Worksheet (Circular 212 Method)



I/S #:	North-South Street:		Monterey Road		Year of Count:		Ambient Growth: (%)		Conducted by:		Date:		
	East-West Street:	Huntington Drive North/Browne Street	2018	2025	PM	7/26/18	KOA Corp	Ryland Lu	Rose Hills Housing Project				
No. of Phases		3		3		Peak Hour:		3		7/26/18			
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?		0		0		0		0		0			
Right Turns: FREE-1, NRTOR-2 or OLA-3?		2		2		2		2		2			
ATSAC-1 or ATSAC+ATCS-2?		0		0		0		0		0			
Override Capacity		0		0		0		0		0			
MOVEMENT		EXISTING CONDITION		EXISTING PLUS PROJECT		FUTURE CONDITION W/O PROJECT		FUTURE CONDITION W/ PROJECT		FUTURE W/ PROJECT W/ MITIGATION			
		Volume	No. of Lanes	Lane Volume	Project Traffic	Total Volume	No. of Lanes	Lane Volume	Added Volume	Total Volume	No. of Lanes	Lane Volume	
NORTHBOUND	Left	79	1	79	22	101	1	85	0	22	1	107	
	Left-Through		0				0				0		
	Through	734	0	734	0	734	0	838	51	838	0	864	
	Through-Right		1				1				1		
	Right	24	0	0	0	24	0	26	0	26	0	26	
SOUTHBOUND	Left-Through-Right		0				0				0		
	Left-Right		0				0				0		
	Left	18	1	18	0	18	1	19	0	19	1	19	
	Left-Through		0				0				0		
	Through	411	2	155	0	411	2	191	75	516	2	193	
EASTBOUND	Through-Right		1				1				1		
	Right	53	0	53	6	59	0	57	0	63	0	63	
	Left-Through-Right		0				0				0		
	Left-Right		0				0				0		
	Left	63	0	63	4	67	0	68	0	72	0	72	
WESTBOUND	Left-Through		0				0				0		
	Through	51	0	158	0	51	0	170	0	55	0	187	
	Through-Right		0				0				0		
	Right	44	0	0	13	57	0	47	0	60	0	60	
	Left-Through-Right		2				2				2		
CRITICAL VOLUMES	Left-Right		0				0				0		
	Left	26	0	26	0	26	0	28	0	28	0	28	
	Left-Through		0				0				0		
	Through	82	0	243	0	82	0	261	0	88	0	261	
	Through-Right		0				0				0		
VOLUME/CAPACITY (V/C) RATIO:	Right	135	0	0	0	135	0	145	0	145	0	145	
	Left-Through-Right		1				1				1		
	Left-Right		0				0				0		
	North-South:	776	310	776	883	883	883	883	0	883	883	883	
	East-West:	306	1086	310	329	329	333	333	0	333	333	333	
SUM:	0.759	0.659	0.762	0.851	0.851	0.853	0.853	0.853	0	0.853	0.853	0.853	
	0.659	0.662	0.662	0.751	0.751	0.753	0.753	0.753		0.753	0.753	0.753	
LEVEL OF SERVICE (LOS):		B		B		C		C		C		C	

REMARKS:

Version: 1i Beta; 8/4/2011

EXISTING + PROJECT IMPACT

Change in v/c due to project: **0.003**
Significant impacted? **NO**

PROJECT IMPACT

Change in v/c due to project: **0.002**
Significant impacted? **NO**
Fully mitigated? **N/A**

JB 81129 HACLA RoseHill Courts

Vistro File: J:\...\RoseHillCourts.vistro

Scenario 4 Existing PM + Project

Report File: J:\...\Existing+Project_PM.pdf

7/13/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	McKenzie Ave & Victorine St	All-way stop	HCM 2010	NB Left	0.039	7.1	A
5	Boundary Ave & Mercury Ave	All-way stop	HCM 2010	EB Thru	0.130	7.6	A
6	McKenzie Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.170	7.8	A
7	Huntington Drive North and Mercury Avenue	Two-way stop	HCM 2010	NB Left	0.002	12.8	B

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 4: McKenzie Ave & Victorine St

Control Type:	All-way stop	Delay (sec / veh):	7.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name	McKenzie Ave			McKenzie Ave			Victorine St			Browne Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	14.00	14.00	14.00	13.00	13.00	13.00	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]	25.00			25.00			25.00			25.00		
Grade [%]	3.00			-8.00			0.00			-5.50		
Crosswalk	No			No			No			No		

Volumes

Name	McKenzie Ave			McKenzie Ave			Victorine St			Browne Ave		
Base Volume Input [veh/h]	10	12	2	2	16	2	0	0	7	4	3	4
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]	10	0	0	0	0	0	0	6	6	0	10	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	12	2	2	16	2	0	6	13	4	13	4
Peak Hour 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
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	3	1	1	4	1	0	2	3	1	3	1
Total Analysis Volume [veh/h]	20	12	2	2	16	2	0	6	13	4	13	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	874	898	984	902
Degree of Utilization, x	0.04	0.02	0.02	0.02


Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.12	0.07	0.06	0.07
95th-Percentile Queue Length [ft]	3.03	1.71	1.48	1.79
Approach Delay [s/veh]	7.28	7.10	6.73	7.09
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.09			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Boundary Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.130

Intersection Setup

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	18.00	18.00	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		30.00		25.00	
Grade [%]	-5.00		-2.00		7.00	
Crosswalk	No		Yes		No	

Volumes

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Base Volume Input [veh/h]	1	6	13	86	108	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]	5	2	4	0	0	8
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]	6	8	17	86	108	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	4	22	27	2
Total Analysis Volume [veh/h]	6	8	17	86	108	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	870	878	895
Degree of Utilization, x	0.02	0.12	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.05	0.40	0.44
95th-Percentile Queue Length [ft]	1.23	9.94	11.11
Approach Delay [s/veh]	7.21	7.65	7.62
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.61		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 6: McKenzie Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	15.00	15.00	15.00	15.00	18.00	18.00	18.00	19.00	19.00	19.00
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]	30.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			-7.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Base Volume Input [veh/h]	0	5	9	19	4	12	3	88	0	19	100	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	6	0	0	0	5	0	0	8	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
Total Hourly Volume [veh/h]	0	5	9	25	4	12	3	93	0	19	108	23
Peak Hour 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
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	1	2	6	1	3	1	23	0	5	27	6
Total Analysis Volume [veh/h]	0	5	9	25	4	12	3	93	0	19	108	23
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	872	813	854	880
Degree of Utilization, x	0.02	0.05	0.11	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.05	0.16	0.38	0.61
95th-Percentile Queue Length [ft]	1.22	3.98	9.46	15.31
Approach Delay [s/veh]	7.20	7.67	7.75	7.93
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.80			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Huntington Drive North and Mercury Avenue

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+r			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	17.00	17.00	17.00	16.00	16.00	16.00	10.00	10.00	10.00	20.00	20.00	20.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Base Volume Input [veh/h]	1	37	0	0	29	130	109	1	5	0	1	1
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	18	11	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]	1	37	0	0	29	148	120	1	5	0	1	1
Peak Hour 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
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	9	0	0	7	37	30	0	1	0	0	0
Total Analysis Volume [veh/h]	1	37	0	0	29	148	120	1	5	0	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

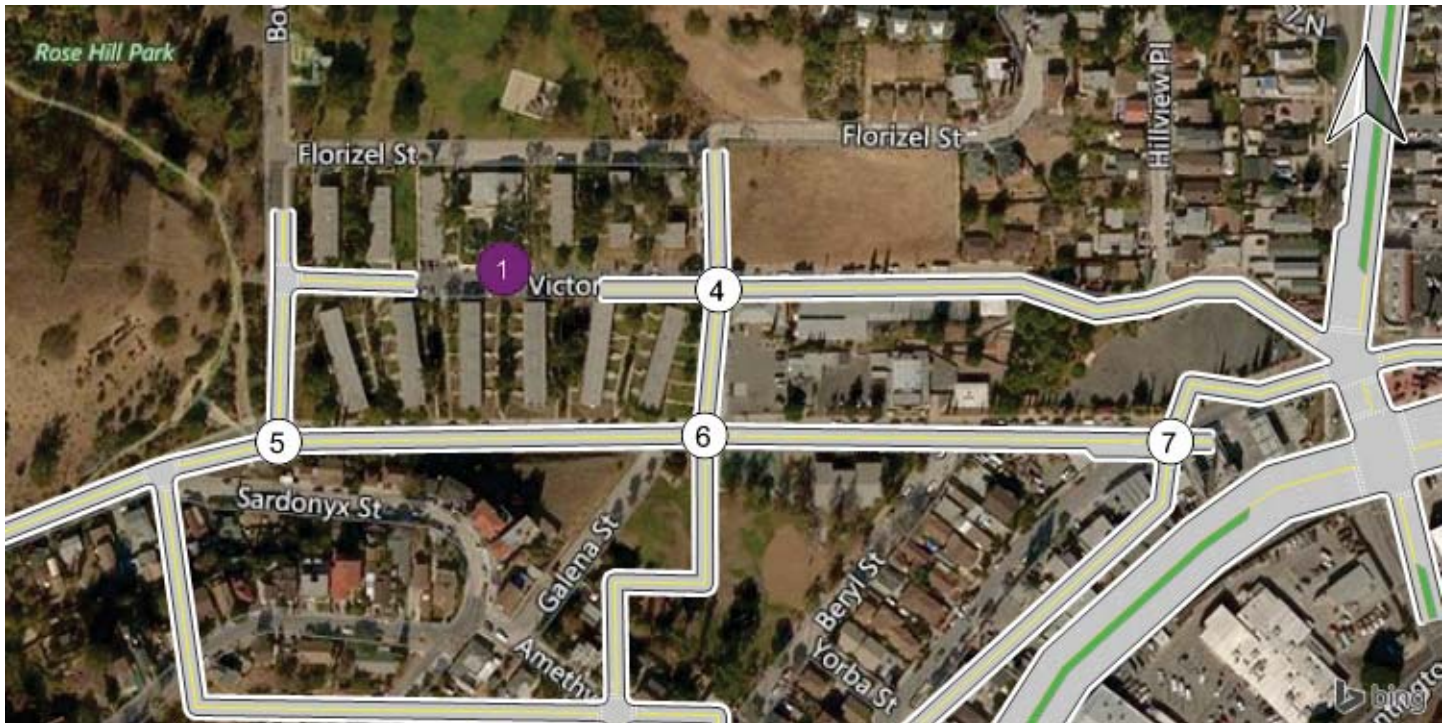
Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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

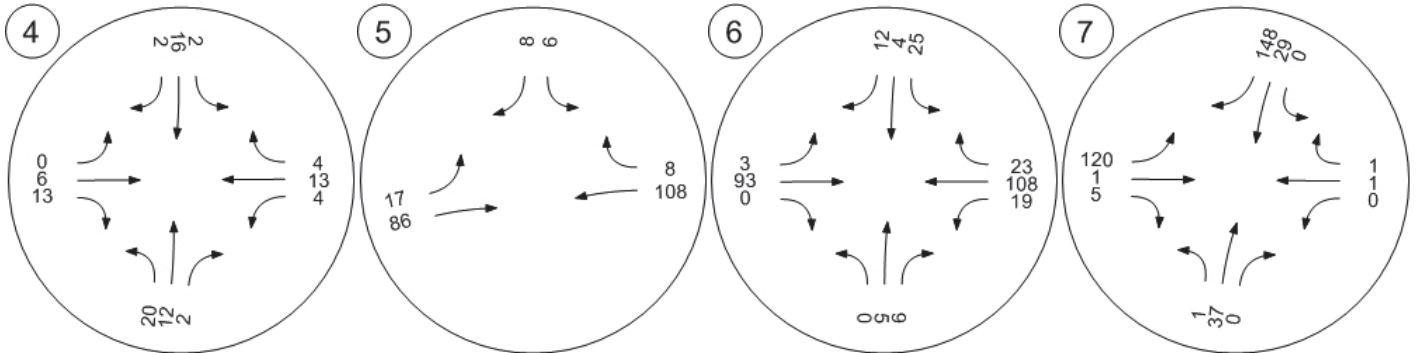
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.00	0.00	0.05	0.14	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.77	11.30	8.72	11.65	11.78	9.17	7.40	0.00	0.00	7.23	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.20	0.20	0.67	0.67	0.67	0.24	0.24	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.00	5.00	5.00	16.85	16.85	16.85	5.99	5.99	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.34			9.60			7.05			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.80											
Intersection LOS	B											

Traffic Volume - Future Total Volume



McKenzie Ave & Victorine St Boundary Ave & Mercury Ave McKenzie Ave & Mercury Av Huntington Drive North and



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Scenario 5 Future without Project AM

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7/24/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	McKenzie Ave & Victorine St	All-way stop	HCM 2010	WB Left	0.051	7.1	A
5	Boundary Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.167	7.8	A
6	McKenzie Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.195	8.1	A
7	Huntington Drive North and Mercury Avenue	Two-way stop	HCM 2010	NB Left	0.018	15.0	B

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 4: McKenzie Ave & Victorine St

Control Type:	All-way stop	Delay (sec / veh):	7.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.051

Intersection Setup

Name	McKenzie Ave			McKenzie Ave			Victorine St			Browne Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	14.00	14.00	14.00	13.00	13.00	13.00	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]	25.00			25.00			25.00			25.00		
Grade [%]	3.00			-8.00			0.00			-5.50		
Crosswalk	No			No			No			No		

Volumes

Name	McKenzie Ave			McKenzie Ave			Victorine St			Browne Ave		
Base Volume Input [veh/h]	8	11	26	2	26	2	1	0	14	29	1	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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]	9	12	28	2	28	2	1	0	15	31	1	1
Peak Hour 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
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	3	7	1	7	1	0	0	4	8	0	0
Total Analysis Volume [veh/h]	9	12	28	2	28	2	1	0	15	31	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	957	887	1005	841
Degree of Utilization, x	0.05	0.04	0.02	0.04

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.16	0.11	0.05	0.12
95th-Percentile Queue Length [ft]	4.04	2.80	1.21	3.06
Approach Delay [s/veh]	6.97	7.21	6.64	7.46
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.11			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 5: Boundary Ave & Mercury Ave**

Control Type:	All-way stop	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.167

Intersection Setup

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	18.00	18.00	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		30.00		25.00	
Grade [%]	-5.00		-2.00		7.00	
Crosswalk	No		Yes		No	

Volumes

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Base Volume Input [veh/h]	1	19	10	112	132	6
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	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
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]	1	20	11	120	141	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	3	30	35	2
Total Analysis Volume [veh/h]	1	20	11	120	141	6
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	908	870	882
Degree of Utilization, x	0.02	0.15	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	0.53	0.60
95th-Percentile Queue Length [ft]	1.77	13.21	14.90
Approach Delay [s/veh]	7.06	7.87	7.89
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.82		
Intersection LOS	A		

**Intersection Level Of Service Report
Intersection 6: McKenzie Ave & Mercury Ave**

Control Type:	All-way stop	Delay (sec / veh):	8.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.195

Intersection Setup

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	15.00	15.00	15.00	15.00	18.00	18.00	18.00	19.00	19.00	19.00
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]	30.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			-7.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Base Volume Input [veh/h]	2	7	10	36	19	14	13	101	1	7	123	26
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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]	2	7	11	39	20	15	14	108	1	7	132	28
Peak Hour 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
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	2	3	10	5	4	4	27	0	2	33	7
Total Analysis Volume [veh/h]	2	7	11	39	20	15	14	108	1	7	132	28
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	826	785	827	858
Degree of Utilization, x	0.02	0.09	0.15	0.19

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.07	0.31	0.52	0.72
95th-Percentile Queue Length [ft]	1.86	7.78	13.02	17.99
Approach Delay [s/veh]	7.47	8.06	8.11	8.21
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.11			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Huntington Drive North and Mercury Avenue

Control Type:	Two-way stop	Delay (sec / veh):	15.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+r			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	17.00	17.00	17.00	16.00	16.00	16.00	10.00	10.00	10.00	20.00	20.00	20.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Base Volume Input [veh/h]	7	52	0	1	65	148	137	1	11	0	0	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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]	7	56	0	1	70	158	147	1	12	0	0	1
Peak Hour 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
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	14	0	0	18	40	37	0	3	0	0	0
Total Analysis Volume [veh/h]	7	56	0	1	70	158	147	1	12	0	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.10	0.00	0.00	0.13	0.15	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.96	12.33	9.22	13.33	13.15	9.94	7.44	0.00	0.00	7.24	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.40	0.40	0.40	1.12	1.12	1.12	0.30	0.30	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	9.94	9.94	9.94	27.96	27.96	27.96	7.46	7.46	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.62			10.94			6.84			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.70											
Intersection LOS	B											

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Scenario 6 Future without Project PM

Report File: J:\...\FuturenoProject_PM.pdf

7/24/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	McKenzie Ave & Victorine St	All-way stop	HCM 2010	NB Thru	0.029	7.0	A
5	Boundary Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.130	7.6	A
6	McKenzie Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.161	7.8	A
7	Huntington Drive North and Mercury Avenue	Two-way stop	HCM 2010	NB Left	0.002	12.6	B

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 4: McKenzie Ave & Victorine St

Control Type:	All-way stop	Delay (sec / veh):	7.0
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

Intersection Setup

Name	McKenzie Ave			McKenzie Ave			Victorine St			Browne Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	14.00	14.00	14.00	13.00	13.00	13.00	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]	25.00			25.00			25.00			25.00		
Grade [%]	3.00			-8.00			0.00			-5.50		
Crosswalk	No			No			No			No		

Volumes

Name	McKenzie Ave			McKenzie Ave			Victorine St			Browne Ave		
Base Volume Input [veh/h]	10	12	2	2	16	2	0	0	7	4	3	4
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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]	11	13	2	2	17	2	0	0	7	4	3	4
Peak Hour 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
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	3	1	1	4	1	0	0	2	1	1	1
Total Analysis Volume [veh/h]	11	13	2	2	17	2	0	0	7	4	3	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	894	910	1046	925
Degree of Utilization, x	0.03	0.02	0.01	0.01


Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.09	0.07	0.02	0.04
95th-Percentile Queue Length [ft]	2.24	1.77	0.51	0.90
Approach Delay [s/veh]	7.15	7.05	6.47	6.94
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.01			
Intersection LOS	A			

**Intersection Level Of Service Report
Intersection 5: Boundary Ave & Mercury Ave**

Control Type:	All-way stop	Delay (sec / veh):	7.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.130

Intersection Setup

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	18.00	18.00	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		30.00		25.00	
Grade [%]	-5.00		-2.00		7.00	
Crosswalk	No		Yes		No	

Volumes

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Base Volume Input [veh/h]	1	6	13	86	108	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	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
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]	1	6	14	92	116	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	4	23	29	0
Total Analysis Volume [veh/h]	1	6	14	92	116	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	919	882	890
Degree of Utilization, x	0.01	0.12	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.02	0.41	0.45
95th-Percentile Queue Length [ft]	0.58	10.20	11.20
Approach Delay [s/veh]	6.95	7.64	7.65
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.63		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 6: McKenzie Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	7.8
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.161

Intersection Setup

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	15.00	15.00	15.00	15.00	18.00	18.00	18.00	19.00	19.00	19.00
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]	30.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			-7.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Base Volume Input [veh/h]	0	5	9	19	4	12	3	88	0	19	100	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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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	5	10	20	4	13	3	94	0	20	107	14
Peak Hour 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
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	1	3	5	1	3	1	24	0	5	27	4
Total Analysis Volume [veh/h]	0	5	10	20	4	13	3	94	0	20	107	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	879	825	858	874
Degree of Utilization, x	0.02	0.04	0.11	0.16

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.05	0.14	0.38	0.57
95th-Percentile Queue Length [ft]	1.30	3.52	9.52	14.33
Approach Delay [s/veh]	7.17	7.57	7.73	7.91
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.77			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Huntington Drive North and Mercury Avenue

Control Type:	Two-way stop	Delay (sec / veh):	12.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+r			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	17.00	17.00	17.00	16.00	16.00	16.00	10.00	10.00	10.00	20.00	20.00	20.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Base Volume Input [veh/h]	1	37	0	0	29	130	109	1	5	0	1	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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]	1	40	0	0	31	139	117	1	5	0	1	1
Peak Hour 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
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	10	0	0	8	35	29	0	1	0	0	0
Total Analysis Volume [veh/h]	1	40	0	0	31	139	117	1	5	0	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.06	0.00	0.00	0.05	0.13	0.07	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.62	11.27	8.74	11.60	11.70	9.15	7.39	0.00	0.00	7.23	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.21	0.21	0.21	0.65	0.65	0.65	0.23	0.23	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.37	5.37	5.37	16.24	16.24	16.24	5.83	5.83	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.30			9.61			7.03			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.82											
Intersection LOS	B											

JB 81129 HACLA RoseHill Courts

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Scenario 7 Future with Project AM

Report File: J:\...\FuturewProject_AM.pdf

7/24/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	McKenzie Ave & Victorine St	All-way stop	HCM 2010	WB Left	0.057	7.2	A
5	Boundary Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.170	7.9	A
6	McKenzie Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.202	8.2	A
7	Huntington Drive North and Mercury Avenue	Two-way stop	HCM 2010	NB Left	0.019	15.8	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 4: McKenzie Ave & Victorine St

Control Type:	All-way stop	Delay (sec / veh):	7.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	14.00	14.00	14.00	13.00	13.00	13.00	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]	25.00			25.00			25.00			25.00		
Grade [%]	3.00			-8.00			0.00			-5.50		
Crosswalk	No			No			No			No		

Volumes

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Base Volume Input [veh/h]	8	11	26	2	26	2	1	0	14	29	1	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	0	0	0	0	9	11	0	2	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]	13	12	28	2	28	2	1	9	26	31	3	1
Peak Hour 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
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	3	7	1	7	1	0	2	7	8	1	0
Total Analysis Volume [veh/h]	13	12	28	2	28	2	1	9	26	31	3	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	936	876	968	837
Degree of Utilization, x	0.06	0.04	0.04	0.04


Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.18	0.11	0.12	0.13
95th-Percentile Queue Length [ft]	4.50	2.84	2.89	3.27
Approach Delay [s/veh]	7.08	7.26	6.86	7.49
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.16			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Boundary Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	7.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.170

Intersection Setup

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	18.00	18.00	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		30.00		25.00	
Grade [%]	-5.00		-2.00		7.00	
Crosswalk	No		Yes		No	

Volumes

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Base Volume Input [veh/h]	1	19	10	112	132	6
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	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	9	4	1	0	0	2
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]	10	24	12	120	141	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	6	3	30	35	2
Total Analysis Volume [veh/h]	10	24	12	120	141	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	863	862	877
Degree of Utilization, x	0.04	0.15	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.12	0.54	0.61
95th-Percentile Queue Length [ft]	3.07	13.47	15.26
Approach Delay [s/veh]	7.34	7.92	7.95
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.87		
Intersection LOS	A		

Intersection Level Of Service Report
Intersection 6: McKenzie Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	8.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.202

Intersection Setup

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	15.00	15.00	15.00	15.00	18.00	18.00	18.00	19.00	19.00	19.00
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]	30.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			-7.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Base Volume Input [veh/h]	2	7	10	36	19	14	13	101	1	7	123	26
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	0	9	2	0	0	9	0	0	2	3
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]	2	8	11	48	22	15	14	117	1	7	134	31
Peak Hour 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
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	2	3	12	6	4	4	29	0	2	34	8
Total Analysis Volume [veh/h]	2	8	11	48	22	15	14	117	1	7	134	31
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	813	775	820	850
Degree of Utilization, x	0.03	0.11	0.16	0.20

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.08	0.37	0.57	0.75
95th-Percentile Queue Length [ft]	1.99	9.21	14.29	18.86
Approach Delay [s/veh]	7.55	8.22	8.23	8.31
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.23			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Huntington Drive North and Mercury Avenue

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+r			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	17.00	17.00	17.00	16.00	16.00	16.00	10.00	10.00	10.00	20.00	20.00	20.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Base Volume Input [veh/h]	7	52	0	1	65	148	137	1	11	0	0	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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	5	18	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]	7	56	0	1	70	163	165	1	12	0	0	1
Peak Hour 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
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	14	0	0	18	41	41	0	3	0	0	0
Total Analysis Volume [veh/h]	7	56	0	1	70	163	165	1	12	0	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.11	0.00	0.00	0.13	0.15	0.10	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.84	12.84	9.34	13.95	13.69	10.09	7.47	0.00	0.00	7.24	0.00	0.00
Movement LOS	C	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.43	0.43	0.43	1.19	1.19	1.19	0.34	0.34	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	10.65	10.65	10.65	29.69	29.69	29.69	8.48	8.48	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.17			11.18			6.93			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.83											
Intersection LOS	C											

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Scenario 8 Future with Project PM

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7/24/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	McKenzie Ave & Victorine St	All-way stop	HCM 2010	NB Left	0.041	7.1	A
5	Boundary Ave & Mercury Ave	All-way stop	HCM 2010	EB Thru	0.139	7.7	A
6	McKenzie Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.181	7.9	A
7	Huntington Drive North and Mercury Avenue	Two-way stop	HCM 2010	NB Left	0.002	13.2	B

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 4: McKenzie Ave & Victorine St

Control Type:	All-way stop	Delay (sec / veh):	7.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

Intersection Setup

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	14.00	14.00	14.00	13.00	13.00	13.00	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]	25.00			25.00			25.00			25.00		
Grade [%]	3.00			-8.00			0.00			-5.50		
Crosswalk	No			No			No			No		

Volumes

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Base Volume Input [veh/h]	10	12	2	2	16	2	0	0	7	4	3	4
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	0	0	0	0	0	0	6	6	0	10	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]	21	13	2	2	17	2	0	6	13	4	13	4
Peak Hour 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
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	3	1	1	4	1	0	2	3	1	3	1
Total Analysis Volume [veh/h]	21	13	2	2	17	2	0	6	13	4	13	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	873	897	982	901
Degree of Utilization, x	0.04	0.02	0.02	0.02

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.13	0.07	0.06	0.07
95th-Percentile Queue Length [ft]	3.22	1.80	1.48	1.79
Approach Delay [s/veh]	7.30	7.11	6.74	7.09
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.10			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Boundary Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.139

Intersection Setup

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	18.00	18.00	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		30.00		25.00	
Grade [%]	-5.00		-2.00		7.00	
Crosswalk	No		Yes		No	

Volumes

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Base Volume Input [veh/h]	1	6	13	86	108	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	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	2	4	0	0	8
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]	6	8	18	92	116	8
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	2	5	23	29	2
Total Analysis Volume [veh/h]	6	8	18	92	116	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	863	875	893
Degree of Utilization, x	0.02	0.13	0.14

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.05	0.43	0.48
95th-Percentile Queue Length [ft]	1.24	10.74	12.03
Approach Delay [s/veh]	7.24	7.70	7.68
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.67		
Intersection LOS	A		

**Intersection Level Of Service Report
Intersection 6: McKenzie Ave & Mercury Ave**

Control Type:	All-way stop	Delay (sec / veh):	7.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.181

Intersection Setup

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	15.00	15.00	15.00	15.00	18.00	18.00	18.00	19.00	19.00	19.00
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]	30.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			-7.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Base Volume Input [veh/h]	0	5	9	19	4	12	3	88	0	19	100	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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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	6	0	0	0	5	0	0	8	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
Total Hourly Volume [veh/h]	0	5	10	26	4	13	3	99	0	20	115	24
Peak Hour 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
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	1	3	7	1	3	1	25	0	5	29	6
Total Analysis Volume [veh/h]	0	5	10	26	4	13	3	99	0	20	115	24
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	867	808	851	877
Degree of Utilization, x	0.02	0.05	0.12	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.05	0.17	0.41	0.66
95th-Percentile Queue Length [ft]	1.32	4.21	10.17	16.50
Approach Delay [s/veh]	7.23	7.71	7.81	8.01
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.87			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Huntington Drive North and Mercury Avenue

Control Type:	Two-way stop	Delay (sec / veh):	13.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+r			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	17.00	17.00	17.00	16.00	16.00	16.00	10.00	10.00	10.00	20.00	20.00	20.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Base Volume Input [veh/h]	1	37	0	0	29	130	109	1	5	0	1	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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	18	11	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]	1	40	0	0	31	157	128	1	5	0	1	1
Peak Hour 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
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	10	0	0	8	39	32	0	1	0	0	0
Total Analysis Volume [veh/h]	1	40	0	0	31	157	128	1	5	0	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.07	0.00	0.00	0.05	0.14	0.08	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.20	11.51	8.78	11.94	12.02	9.25	7.41	0.00	0.00	7.23	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.22	0.73	0.73	0.73	0.26	0.26	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.58	5.58	5.58	18.31	18.31	18.31	6.42	6.42	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.55			9.71			7.08			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.90											
Intersection LOS	B											

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Scenario 9 Future Construction AM

Report File: J:\...\Future Construction_AM.pdf

8/1/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	McKenzie Ave & Victorine St	All-way stop	HCM 2010	WB Left	0.090	7.4	A
5	Boundary Ave & Mercury Ave	All-way stop	HCM 2010	EB Thru	0.181	7.9	A
6	McKenzie Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.241	8.3	A
7	Huntington Drive North and Mercury Avenue	Two-way stop	HCM 2010	NB Left	0.019	15.8	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 4: McKenzie Ave & Victorine St

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	14.00	14.00	14.00	13.00	13.00	13.00	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]	25.00			25.00			25.00			25.00		
Grade [%]	3.00			-8.00			0.00			-5.50		
Crosswalk	No			No			No			No		

Volumes

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Base Volume Input [veh/h]	8	11	26	2	26	2	1	0	14	29	1	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	32	0	0	0	0	0	0	2	2	0	16	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]	41	12	28	2	28	2	1	2	17	31	17	1
Peak Hour 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
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]	10	3	7	1	7	1	0	1	4	8	4	0
Total Analysis Volume [veh/h]	41	12	28	2	28	2	1	2	17	31	17	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	898	870	967	836
Degree of Utilization, x	0.09	0.04	0.02	0.06

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.30	0.11	0.06	0.19
95th-Percentile Queue Length [ft]	7.42	2.86	1.58	4.66
Approach Delay [s/veh]	7.41	7.29	6.80	7.58
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.37			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Boundary Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	7.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.181

Intersection Setup

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	18.00	18.00	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		30.00		25.00	
Grade [%]	-5.00		-2.00		7.00	
Crosswalk	No		Yes		No	

Volumes

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Base Volume Input [veh/h]	1	19	10	112	132	6
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	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	1	10	0	0	14
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	21	21	120	141	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	5	5	30	35	5
Total Analysis Volume [veh/h]	3	21	21	120	141	20
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	884	863	890
Degree of Utilization, x	0.03	0.16	0.18

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.08	0.58	0.66
95th-Percentile Queue Length [ft]	2.09	14.54	16.46
Approach Delay [s/veh]	7.19	7.98	7.94
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.90		
Intersection LOS	A		

**Intersection Level Of Service Report
Intersection 6: McKenzie Ave & Mercury Ave**

Control Type:	All-way stop	Delay (sec / veh):	8.3
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.241

Intersection Setup

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	15.00	15.00	15.00	15.00	18.00	18.00	18.00	19.00	19.00	19.00
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]	30.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			-7.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Base Volume Input [veh/h]	2	7	10	36	19	14	13	101	1	7	123	26
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	0	2	0	0	0	2	0	0	14	27
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]	2	12	11	41	20	15	14	110	1	7	146	55
Peak Hour 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
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	3	3	10	5	4	4	28	0	2	37	14
Total Analysis Volume [veh/h]	2	12	11	41	20	15	14	110	1	7	146	55
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	796	767	816	864
Degree of Utilization, x	0.03	0.10	0.15	0.24

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.10	0.33	0.54	0.94
95th-Percentile Queue Length [ft]	2.43	8.22	13.49	23.51
Approach Delay [s/veh]	7.67	8.21	8.21	8.48
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	8.31			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Huntington Drive North and Mercury Avenue

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+r			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	17.00	17.00	17.00	16.00	16.00	16.00	10.00	10.00	10.00	20.00	20.00	20.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Base Volume Input [veh/h]	7	52	0	1	65	148	137	1	11	0	0	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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	41	3	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]	7	56	0	1	70	199	150	1	12	0	0	1
Peak Hour 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
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	14	0	0	18	50	38	0	3	0	0	0
Total Analysis Volume [veh/h]	7	56	0	1	70	199	150	1	12	0	0	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.10	0.00	0.00	0.13	0.18	0.09	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.84	12.43	9.26	13.68	13.49	10.22	7.45	0.00	0.00	7.24	0.00	0.00
Movement LOS	C	B	A	B	B	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.41	0.41	0.41	1.35	1.35	1.35	0.31	0.31	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	10.18	10.18	10.18	33.65	33.65	33.65	7.63	7.63	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.81			11.08			6.85			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	9.89											
Intersection LOS	C											

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Scenario 10 Future Construction PM

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8/1/2018

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
4	McKenzie Ave & Victorine St	All-way stop	HCM 2010	NB Left	0.050	7.1	A
5	Boundary Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.135	7.7	A
6	McKenzie Ave & Mercury Ave	All-way stop	HCM 2010	WB Thru	0.169	7.9	A
7	Huntington Drive North and Mercury Avenue	Two-way stop	HCM 2010	NB Left	0.002	13.9	B

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 4: McKenzie Ave & Victorine St

Control Type:	All-way stop	Delay (sec / veh):	7.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.050

Intersection Setup

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	14.00	14.00	14.00	13.00	13.00	13.00	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]	25.00			25.00			25.00			25.00		
Grade [%]	3.00			-8.00			0.00			-5.50		
Crosswalk	No			No			No			No		

Volumes

Name	McKenzie Ave			McKenzie Ave			Driveway			Browne Ave		
Base Volume Input [veh/h]	10	12	2	2	16	2	0	0	7	4	3	4
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	0	0	0	0	0	21	21	0	2	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]	13	13	2	2	17	2	0	21	28	4	5	4
Peak Hour 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
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	3	1	1	4	1	0	5	7	1	1	1
Total Analysis Volume [veh/h]	13	13	2	2	17	2	0	21	28	4	5	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	872	890	971	909
Degree of Utilization, x	0.03	0.02	0.05	0.01

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.10	0.07	0.16	0.04
95th-Percentile Queue Length [ft]	2.49	1.81	3.98	1.09
Approach Delay [s/veh]	7.27	7.15	6.91	7.02
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.06			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 5: Boundary Ave & Mercury Ave

Control Type:	All-way stop	Delay (sec / veh):	7.7
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.135

Intersection Setup

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	18.00	18.00	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		30.00		25.00	
Grade [%]	-5.00		-2.00		7.00	
Crosswalk	No		Yes		No	

Volumes

Name	Boundary Ave		Mercury Ave		Mercury Ave	
Base Volume Input [veh/h]	1	6	13	86	108	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	1.07	1.07	1.07	1.07	1.07	1.07
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	10	1	0	0	2
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]	19	16	15	92	116	2
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	4	4	23	29	1
Total Analysis Volume [veh/h]	19	16	15	92	116	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings**Lanes**

Capacity per Entry Lane [veh/h]	846	866	876
Degree of Utilization, x	0.04	0.12	0.13

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.13	0.42	0.46
95th-Percentile Queue Length [ft]	3.23	10.53	11.62
Approach Delay [s/veh]	7.44	7.74	7.75
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.70		
Intersection LOS	A		

**Intersection Level Of Service Report
Intersection 6: McKenzie Ave & Mercury Ave**

Control Type:	All-way stop	Delay (sec / veh):	7.9
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.169

Intersection Setup

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	15.00	15.00	15.00	15.00	15.00	15.00	18.00	18.00	18.00	19.00	19.00	19.00
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]	30.00			25.00			25.00			25.00		
Grade [%]	0.00			0.00			-7.00			0.00		
Crosswalk	No			No			No			Yes		

Volumes

Name	Galena Avenue			McKenzie Ave			Mercury Ave			Mercury Ave		
Base Volume Input [veh/h]	0	5	9	19	4	12	3	88	0	19	100	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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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	21	0	0	0	18	0	0	2	2
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	5	10	41	4	13	3	112	0	20	109	16
Peak Hour 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
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	1	3	10	1	3	1	28	0	5	27	4
Total Analysis Volume [veh/h]	0	5	10	41	4	13	3	112	0	20	109	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	862	794	845	860
Degree of Utilization, x	0.02	0.07	0.14	0.17

Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.05	0.24	0.47	0.60
95th-Percentile Queue Length [ft]	1.33	5.89	11.75	15.11
Approach Delay [s/veh]	7.25	7.89	7.93	8.03
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.94			
Intersection LOS	A			

Intersection Level Of Service Report
Intersection 7: Huntington Drive North and Mercury Avenue

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	+			+			+r			+		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	17.00	17.00	17.00	16.00	16.00	16.00	10.00	10.00	10.00	20.00	20.00	20.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00
Speed [mph]	25.00			30.00			25.00			20.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name	Huntington Dr N			Huntington Dr N			Mercury Ave			Driveway		
Base Volume Input [veh/h]	1	37	0	0	29	130	109	1	5	0	1	1
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	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
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	3	39	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]	1	40	0	0	31	142	156	1	5	0	1	1
Peak Hour 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
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	10	0	0	8	36	39	0	1	0	0	0
Total Analysis Volume [veh/h]	1	40	0	0	31	142	156	1	5	0	1	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
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	0.07	0.00	0.00	0.06	0.13	0.10	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.90	12.18	8.87	12.58	12.58	9.23	7.46	0.00	0.00	7.23	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.25	0.25	0.69	0.69	0.69	0.32	0.32	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	6.15	6.15	6.15	17.30	17.30	17.30	7.98	7.98	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.22			9.83			7.18			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.90											
Intersection LOS	B											