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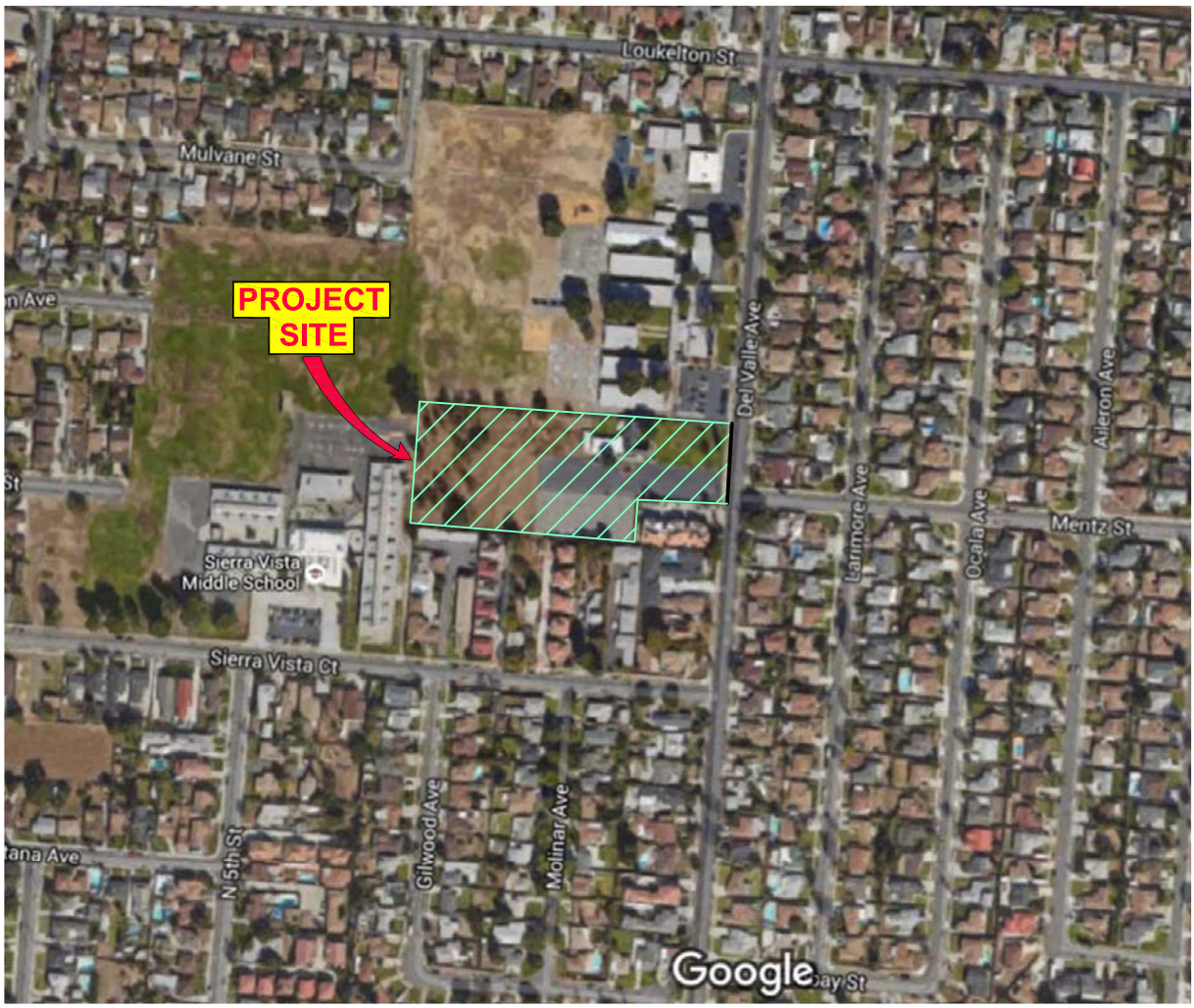
TRAFFIC IMPACT ANALYSIS FOR

Del Valle Residentail

Located at
747 Del Valle Avenue
in the City of La Puente



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August 2016

TRAFFIC IMPACT ANALYSIS FOR

A 45-UNIT HOME DEVELOPMENT

Located at
747 Del Valle Avenue

In the
City of La Puente

Prepared by:

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January 2016
Revised August 2016

EXECUTIVE SUMMARY

This report documents the results of a study evaluating the potential traffic impacts created by the construction of a new residential home project with 45 homes. The new Project will replace the existing 5,131 square foot religious institution with individual detached condominium units. The site is located on the west side of Del Valle Avenue at the terminus of Mentz Street. An aerial view of the Project area is provided following the Executive Summary.

The Project proposes two parking spaces per unit in private garages (90 spaces) and 23 parking spaces within the development for guests. Vehicular access will be provided from a single driveway off of Del Valle Avenue. The driveway will provide access to internal private access roadways to each of the individual units, guest parking and community area.

It is estimated that the development Project will be completed and occupied in 2018 and will generate an increase of up to 381 daily trips with 26 trips during the am peak hour and 39 trips during the pm peak hour. Using the criteria established by the City of La Puente based on Los Angeles County guidelines, it has been determined that the added traffic volume generated by the development Project will not significantly impact any of the nine (9) study intersections. The trip generation and traffic study locations were determined based upon discussions with the City of La Puente for the study parameters.

The City of La Puente Circulation and Infrastructure Element of the General Plan (adopted May 2004) identifies a Level of Service (LOS) D or better on a weekday during the AM and PM peak hours as acceptable operating conditions and LOS C for non-peak hour operating conditions. LOS E is the acceptable operating condition at commercial intersections. Signalized study intersections are identified as significantly impacted if the intersection is operating at LOS C with the Project and there is a 4% or more increase in the volume to capacity ratio (V/C), if the intersection is operating at LOS D with the project and there is a 2% or more increase in the V/C, or if the intersection is operating at LOS E or F and there is a 1% or more increase in the V/C. A significant traffic impact is identified at intersections that are not signalized if it is currently

operating at LOS A, B, C or D and increases to LOS E or F with the Project. If an unsignalized intersection is operating at LOS E or F currently, a 1% or more increase in the delay is considered a significant impact.

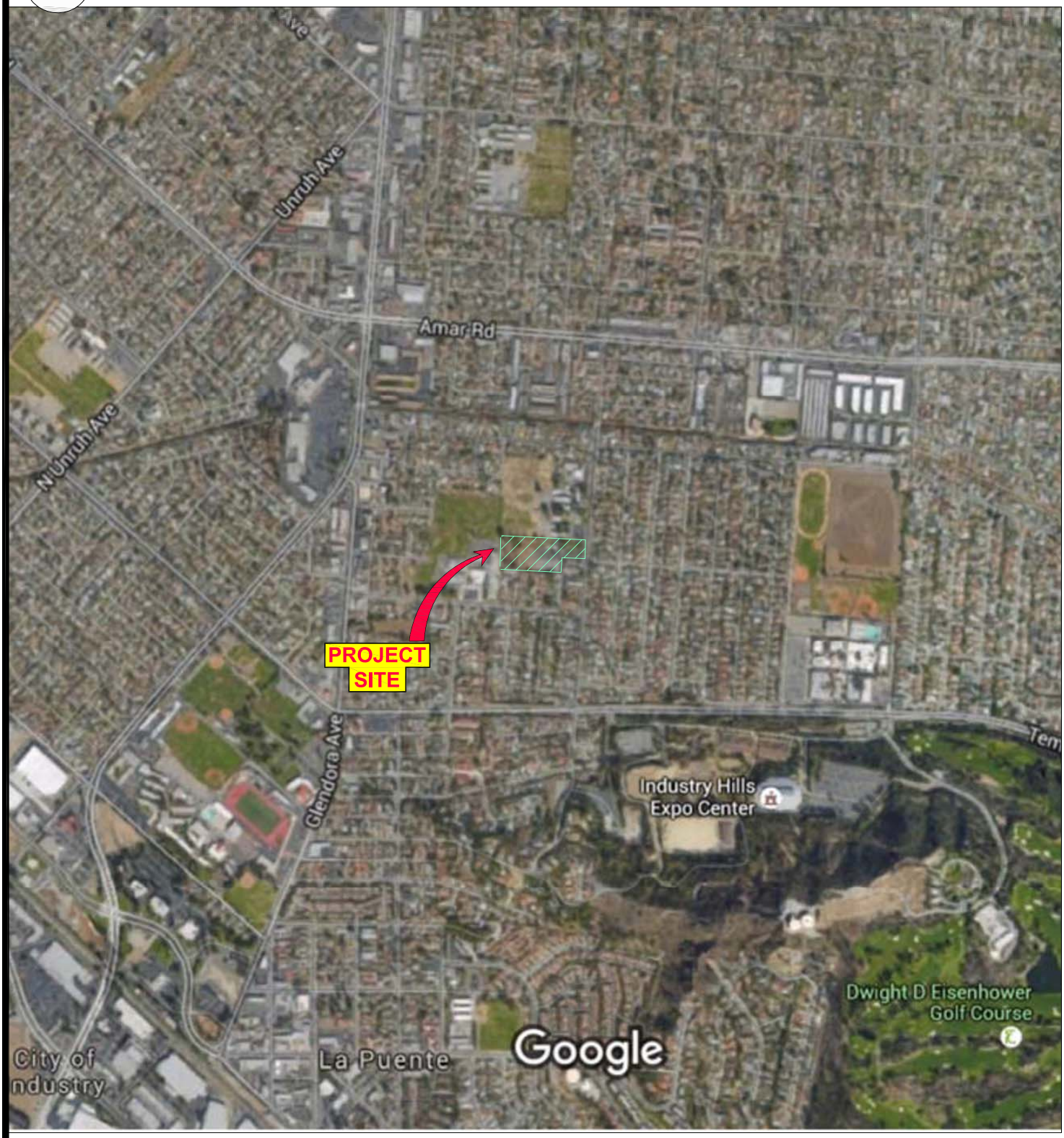
Seven of the nine study intersections are identified as operating within acceptable levels of service in the study area. Two of the nine study intersections, including westbound Loukelton Street at Hacienda Boulevard during the AM and PM Peak Hour and southbound 5th Street at Temple Avenue during the AM peak hour have been identified as currently operating at LOS F without the Project.

This traffic study evaluates Existing (November 2015), Existing +Proposed Project, Existing + Ambient Growth, Existing + Ambient Growth + Cumulative Projects (Without Project), and Exiting + Ambient Growth + Cumulative Projects + Proposed Project (With Project) condition. The City of La Puente is within regional service area 26 of the Los Angeles County Congestion Management Plan 2010. A rate of 0.46% growth per year has been identified as ambient growth rate for RSA 26 by the CMP between 2015 and 2020. Thirty-one related projects were identified within the City of La Puente, City of Industry and Unincorporated County Areas around the Project study that may have influence on the study intersections.

The addition of the 747 Del Valle Home Development Project traffic to the existing and future traffic conditions does not exceed the City of La Puente significant impact criteria. No significant traffic impacts are identified with the proposed Project.

Parking – Code required for the residential project will be provided with 90 residential parking spaces within garages and 23 guest spaces. No parking impacts are anticipated.

No transit, construction, Congestion Management Program, bikeways or freeway significant impacts are anticipated with the Project.



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SETTING

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CHAPTER 1 INTRODUCTION

As part of the Project's environmental review, an evaluation of the proposed development's potential traffic impact on the surrounding area is required. The City of La Puente uses the Los Angeles County guidelines and impact criteria to evaluate a Project's potential traffic impact in the City. Two signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method and seven unsignalized locations were evaluated using the Highway Capacity Manual (HCM) method. The ICU method calculates the operating conditions of each individual study intersection that are signalized using a ratio of peak hour traffic volume to the intersection's lane capacity. The HCM method evaluates delay at unsignalized locations based on the stops, overall traffic volumes and lane configurations. Any change to the intersection's peak hour operating condition caused by an increase/decrease in traffic volume can be quantified (i.e. traffic impact) using these analysis methods.

Potential traffic impacts caused by a development project that exceed limits established by the City of La Puente/Los Angeles County are identified. Any potentially significantly impacted intersections are then evaluated for possible traffic mitigation measures.

Pursuant to the City of La Puente and Los Angeles County traffic impact guidelines, the following steps have been taken to develop the existing and future traffic volume estimate:

(a) Existing Conditions: Existing traffic with new counts conducted Tuesday November 3, 2015 conditions;

(b) Existing + Project: Project traffic was added to the Existing conditions in (a) for the Existing +Project traffic conditions to determine potential impacts;

(c) Future Existing + Ambient: Existing Traffic in (a) + ambient growth (0.46 % per year increase to year 2018);

(d) Future Existing + Ambient + Cumulative Project Traffic: Traffic volumes in (c) + 31 cumulative projects traffic in the area, and;

(e) Existing + Ambient + Cumulative Project+ Project: Traffic in (d) with the Project Traffic added to determine potential impacts.

An analysis for two signalized locations and seven unsignalized location of the existing and future traffic conditions analysis has been completed at those locations expected to have the highest potential for significant traffic impacts. Morning and evening peak hour conditions have been evaluated at nine (9) key intersections with the addition of an after school evaluation at seven of these same intersections. These seven intersections were the most likely influenced by vehicle and pedestrian traffic associated with the three schools in the immediate area and the Project. The future traffic conditions include the potential construction of 31 other land development projects (cumulative projects) in the general vicinity of the Project site.

The intersections analyzed in this study are:

1. Hacienda Boulevard and Loukelton Street (stop sign controlled);
2. Glendora Avenue and Sierra Vista Court (stop sign controlled);
3. 5th Street and Sierra Vista Court (stop sign controlled);
4. 5th Street and Temple Avenue (stop sign controlled);
5. Amar Road and Del Valle Avenue (signal controlled);
6. Del Valle Avenue and Loukelton Street (stop sign controlled);
7. Del Valle Avenue and Mentz Street (stop sign controlled);
8. Del Valle Avenue and Sierra Vista Court (stop sign controlled); and,
9. Del Valle Avenue and Temple Avenue (signal controlled).

CHAPTER 2 PROJECT DESCRIPTION

The proposed Project will be constructed on land that currently is developed with a 5,131 square foot religious institution, a surface parking lot and open space. The proposed Project will include 45 units of single family housing with guest parking on interior project roadways. The land will be subdivided as residential condominium units. Each of the units will be individual structures without common walls. The units will have individually accessed garages capable of parking two vehicles.

The site is located on the on the west side of Del Valle Avenue at the terminus of Mentz Street west of Larimore Avenue. The location of the Project is depicted on Figure 1.

The Project proposes 90 garage residence parking spaces and 23 guest parking spaces which meets the City of La Puente code required parking. Vehicular access to the Project will be from Del Valle Avenue along the southern boundary of the Project site approximately 4 feet north of the centerline of Mentz Street terminus similar to the current site's driveway.

Figure 2 illustrates the Project site plan.

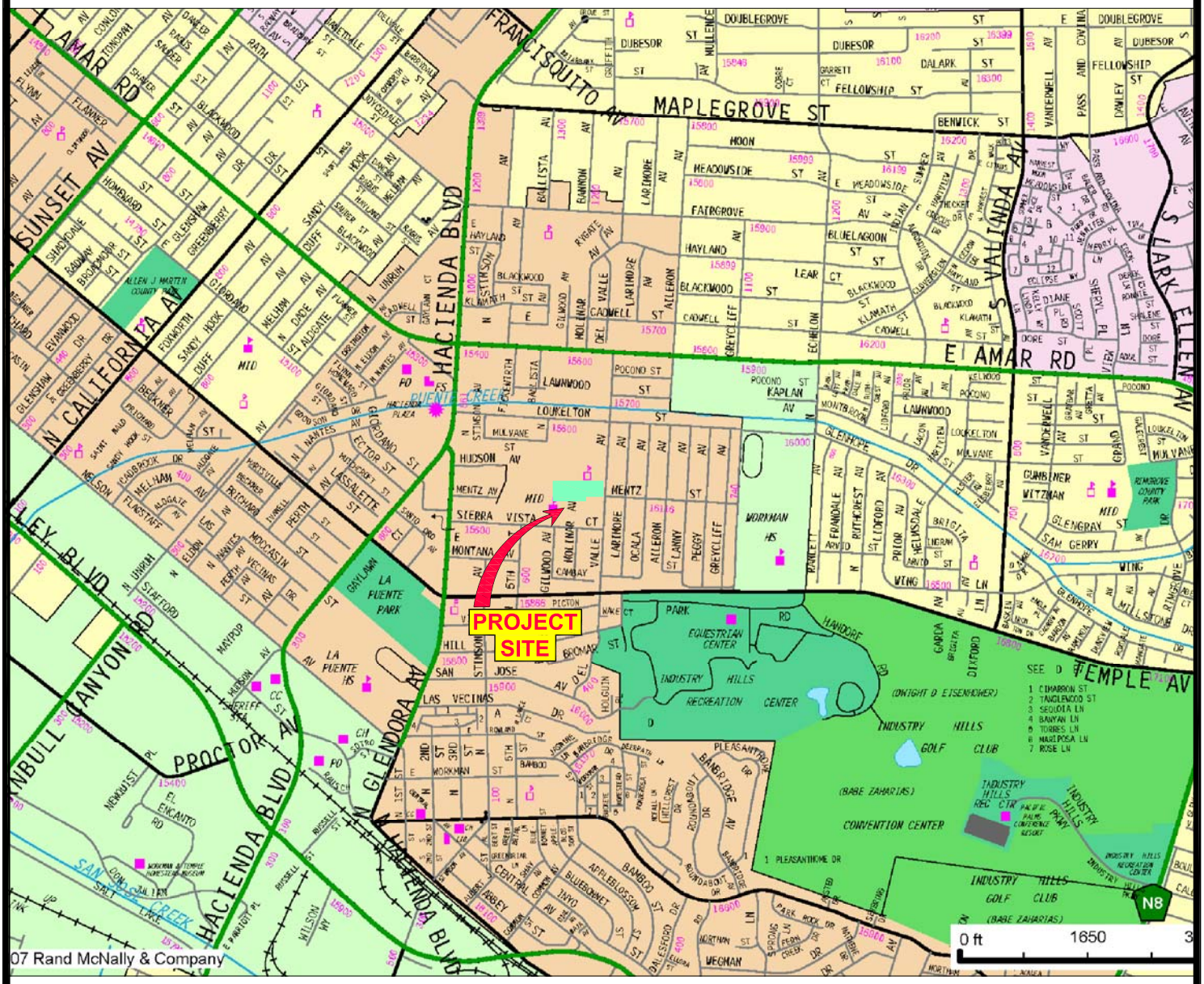

FIGURE 1

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PROJECT LOCATION

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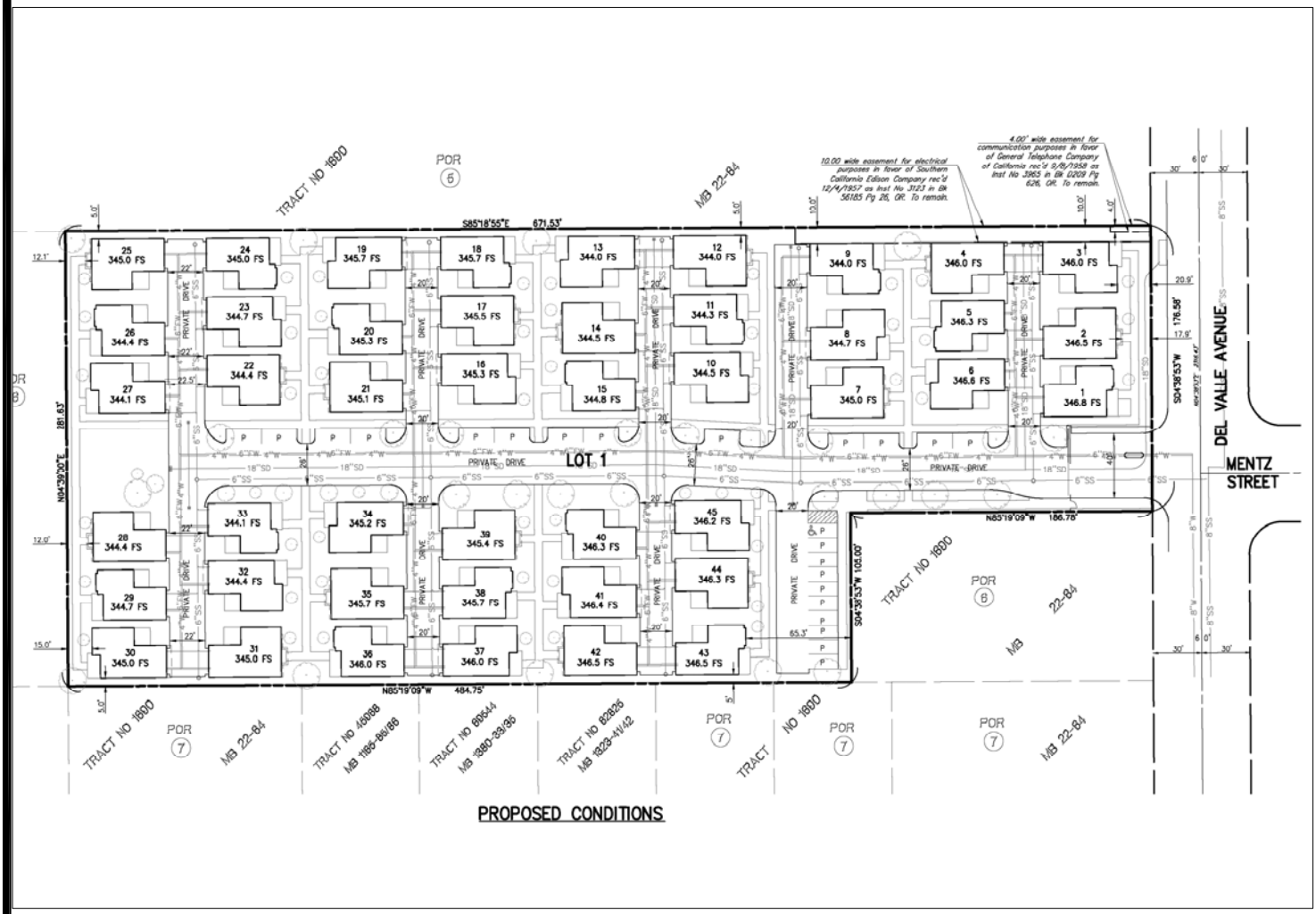

PSOMAS DEC 2015

FIGURE 2

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PROJECT SITE PLAN

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Land Use

The Project is located in the City of La Puente. The current land use map for the study area is provided in Appendix A.

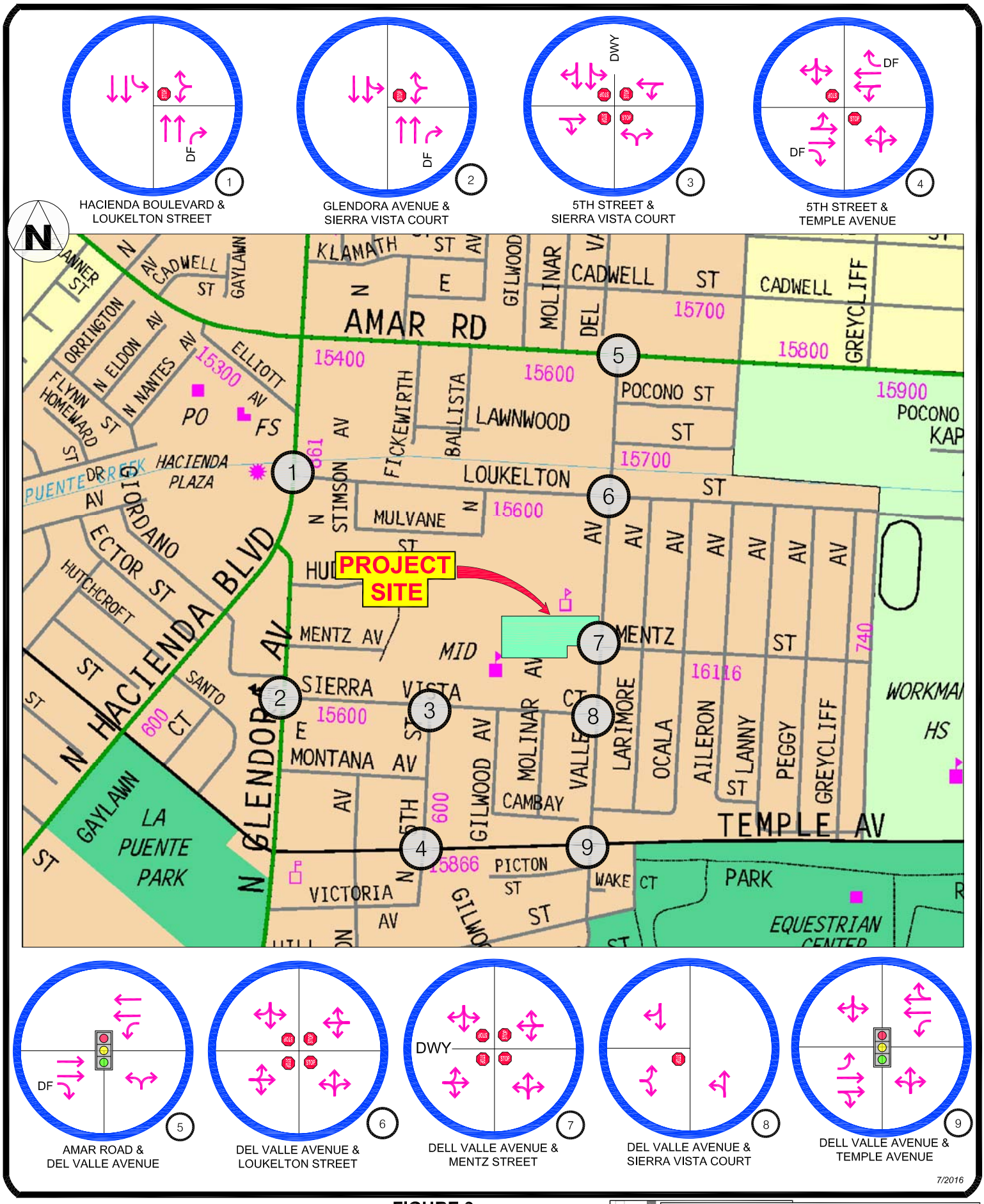
In addition to collecting traffic volume data for this analysis, field surveys were conducted in the study area to determine the roadway and intersection geometry and traffic signal operations. Figure 3 illustrates the study locations, type of intersection traffic control and lane configurations for the Project impact analysis. A brief description of the affected roadway facilities is provided below with the street aerial views of the intersections provided in Appendix B.

Transportation Facilities

The Project is in area of the City of La Puente with freeway access to the San Bernardino Freeway (I-10) approximately two and three quarters (2.75) of a mile to the north, San Gabriel Freeway (I-605) approximately four (4) miles to the west, and the Pomona Freeway (SR-60) approximately two miles to the south. These freeways link to numerous other freeways in the vicinity providing extensive regional access.

The San Bernardino Freeway (I-10) operates in the east-west direction from the west coast to the eastern border of California and beyond to the east coast with full access to the I-10 Freeway at South Vicente Avenue. The San Gabriel Freeway (I-605) operates in the north-south direction and extends from the Garden Grove Freeway (SR-22) to the Foothill Freeway (I-210). Full access is provided from Valley Boulevard in the Project vicinity. The Pomona Freeway (SR-60) operates in the east-west direction and extends from the Golden State Freeway (I-5) to the Riverside Freeway (I-215). SR-60 is accessible from Hacienda Boulevard and Three Palms Street in the Project vicinity.

The I-10 Freeway carries approximately 241,000 vehicles per day (VPD) and 15,600 vehicles per hour (VPH) near the junction with I-605 Freeway according to State of California Highway Division (Caltrans) data collected in 2014. The I-605 Freeway carries approximately 220,00 VPD and 15,300 VPD between the I-605 Freeway



DF= DeFacto operational right turn (not striped)

FIGURE 3

STUDY INTERSECTION CHARACTERISTICS

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and SR-60 junctions according to Caltrans data collected in 2015. The SR-60 carries approximately 254,00 VPD and 17,700 VPD between the I-605 and SR-60 junctions according to Caltrans data collected in 2014.

5th Street is a north-south discontinuous roadway in the City of La Puente extending from Sierra Vista Court to Victoria Avenue in the immediate Project vicinity. 5th Street is designated as a Local Street in the City of La Puente Circulation and Infrastructure Element of the General Plan (Circulation Element). Local Streets are designed to carry low volumes of traffic and provide access to local businesses and residential properties. One lane in each direction is provided in the Project area.

Amar Road is an east-west roadway in the City of La Puente extending from Baldwin Park Boulevard in the City of Industry to Grand Avenue in the City of Walnut. Amar Road is designated as a Major Highway in the City of La Puente Circulation Element. Amar Road is identified as part of the City's truck route system. A Major Highway is designed to carry volumes between 40,000 to 60,000 VPD. Two lanes in each direction are provided on Amar Road in the Project area.

Del Valle Avenue is a north-south roadway designated as a Collector Street from the southern City of La Puente boundary to Amar Road and a Local Street northerly to the northern City boundary. A Collector Street is designed to carry between 10,000 and 15,000 VPD. Del Valle Avenue is designated as a Collector Street along the Project frontage. One lane in each direction, with parking, is provided in the Project area.

Glendora Avenue is a north-south roadway designated as a Secondary Highway between Hacienda Boulevard and Temple Avenue in the Circulation Element. Two lanes in each direction are provided in the Project area.

Hacienda Boulevard is designated as a Major Highway. Hacienda Boulevard is identified as part of the City's truck route system. Two lanes in each direction are provided with a raised center median along much of the roadway in the Project area.

Loukelton Street is an east-west roadway designated as a Collector Street in the City of La Puente Circulation Element. Loukelton Street extends from Hacienda Boulevard to a

terminus at Workman High School. One lane in each direction is provided in the Project area.

Mentz Street is an east-west street designated as a Local Street by the City of La Puente. Mentz Street extends from Del Valle Avenue to a terminus at Workman High School. One lane in each direction is provided in the Project area.

Sierra Vista Court operates in the east-west direction and is designated as a Local Street by the City of La Puente. Sierra Vista extends from Glendora Avenue to Del Valle Avenue in the Immediate Project area. One lane in each direction is provided in the immediate Project area.

Temple Avenue is an east-west street designated as a Secondary Highway in the Circulation Element. A Secondary Highway has been designed to carry 15,000 to 25,000 VPD in the City of La Puente. Two lanes in each direction are provided in the Project area.

Transit Service

Public transportation opportunities are provided in the immediate Project vicinity. Public transportation in the City area is provided by the La Puente LINK, Foothill Transit, Metrolink, San Gabriel Transit Dial-a-Ride & Metropolitan Transportation Authority (Metro).

The La Puente Link is a low cost transit service that provides a circulator service operating in the clockwise direction. The circulator traverses the City providing stops at major City destination points including City Hall, Senior Center, La Puente Park & Community Center and Willow School. The circulator also provides easy access to additional transit services. There is a stop on the southwest corner of Amar Road and Del Valle Avenue in the immediate Project area.

Metrolink - The Metrolink trains provide services north and south of the Project site in the east-west direction that connect to additional north south and east-west line providing regional services through the area. Two lines are provided in the immediate area including:

San Bernardino Line – Operates between the San Bernardino Station and Los Angeles Union Station with a station in El Monte at 10925 Railroad Street. This station is located north of the I-10 and west of the I605 Freeways. The San Bernardino line operates in the east-west direction north of the Project site.

Riverside Line – Operates between the Riverside-Downtown station and Downtown Los Angeles. There is a station in Industry at 600 S La Brea Canyon. The Riverside Line operates in the east-west direction south of the Project site.

Foothill Transit provides several services in the area including the following:

Route 178 operates between the Puente Hills Mall and the El Monte Metrolink Station. The service travels east-westbound along Amar Road and north-south along Valinda Avenue north of Amar Road.

Route 185 operates between Azusa, West Covina and Hacienda Heights. The line operates along Hacienda Boulevard, Glendora Avenue and Temple Avenue in the immediate Project area.

Route 280 operates between Azusa and the Puente Hills Mall via Azusa Avenue.

Route 486 operates between Pomona, La Puente, and El Monte via Amar Road in the Project area.

San Gabriel Transit operates a Dial-a-Ride service available to residents 55 years of age or older. The service provides service to and from any destination within the City and up to five miles out of the City for medical and dental appointments. Advanced reservations are required.

Metro provides Line 194 in the Project area along Valley Boulevard with service between the El Monte Station and Cal Poly Pomona.

Transfer opportunities are available to/from the routes in the immediate area for the local and regional lines. The transit and Metrolink lines are illustrated in Appendix C.

Project Traffic Generation

Traffic-generating characteristics of many land uses including the proposed residential Project and existing religious institution has been surveyed by the Institute of Transportation Engineers (ITE). The results of the traffic generation studies have been published in a handbook titled Trip Generation, 9th Edition. This publication of traffic generation data has become the industry standard for estimating traffic generation for different land uses.

The ITE studies indicate that the use and the size associated with the proposed Project generally exhibit the trip-making characteristics as shown by the trip rates in Table 1.

Table 1
Traffic Generation Rates

	ITE	Daily	AM Peak Hour			PM Peak Hour		
Description	**Code**	**Traffic**	**Total**	**In**	**Out**	**Total**	**In**	**Out**
Single Family Home	210	9.52	0.75	25%	75%	1.00	63%	37%
Church	560	9.11	0.56	62%	38%	0.55	48%	52%

Rate for Housing is per unit, per 1,000 sf for religious institution

Traffic count data was collected at the intersection of Del Valle Avenue and Mentz Street. This data collection included the peak hour vehicle, pedestrian, and bicycle trips associated with the current religious institution on the Project site. The physical data collected at the site's driveway was used for the peak hour data for the existing use instead of the ITE rates. The ITE rates were used for the existing use daily rates.

It is estimated that the Project will conservatively generate a net total of 381 daily trips with 26 trips during the AM peak hour and 39 trips during the PM peak hour. Table 2 displays the estimated Project trip generation.

Table 2
Estimated Project Traffic Generation

Description	Size	Daily Traffic	AM Peak Hour Total	AM Peak Hour In	AM Peak Hour Out	PM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out
PROPOSED								
Single Family Homes	45 units	428	34	9	25	45	28	17
REMOVAL OF EXISTING								
Religious Institutuion	5,131 sf	47	8	0	8	6	4	2
NET Project		**381**	**26**	**9**	**17**	**39**	**24**	**15**

Trip Distribution and Assignment of Project Traffic

A primary factor affecting a Project's trip direction is the spatial distribution of destination points that would generate Project trip origins and destinations. The estimated Project directional trip distribution is also based on the study area roadway network, freeway locations, traffic flow patterns in and out of this area of the City of La Puente, coordination with City of La Puente designated staff and consistency with previously approved traffic studies for this area of La Puente.

Figure 4 illustrates the estimated area wide Project traffic distribution percentages. Figure 5a shows the estimated Project traffic percentages detailed at each of the selected study intersections. Figure 5b shows the existing use traffic distribution based on the traffic counts conducted at the intersection of Del Valle Avenue and Mentz Street with the trips distributed to the other study intersections. Using the traffic assignment at each intersection and the estimated peak hour traffic volume as provided in the Table 2 above, net peak hour traffic volumes at each study locations have been calculated and are shown in Figure 6 for the development. The Project's net PM Peak Hour trip generation was used for the after school analysis even though the Project trips are likely to be lower during this time period and provides a conservative estimate of potential traffic impacts. The estimated assignment of the Project traffic flow provides the information necessary to analyze the potential traffic impacts generated by the Project at the study intersections.

FIGURE 4

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OVERALL PROJECT DISTRIBUTION PERCENTAGE

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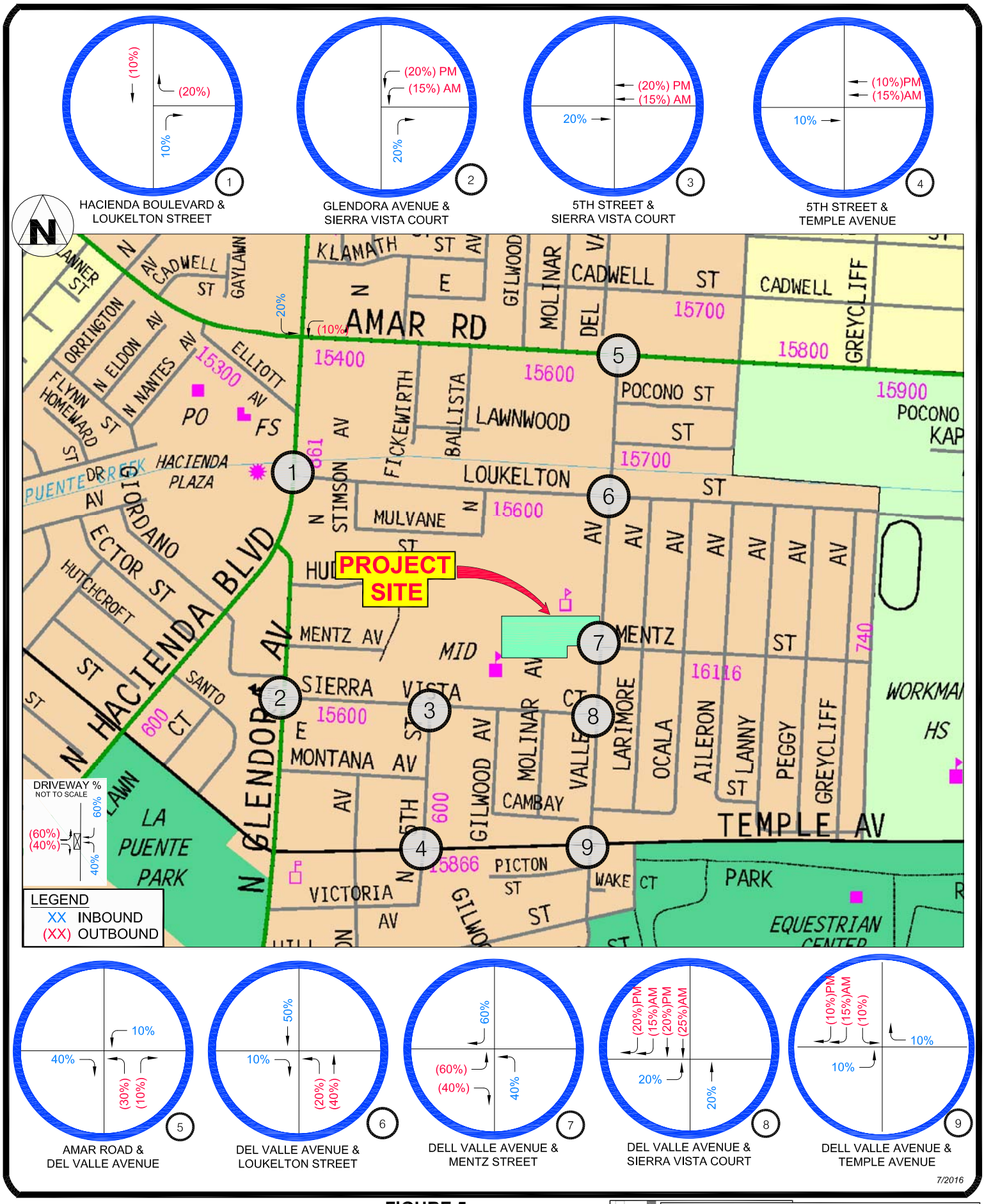

FIGURE 5 a

NEW PROJECT TRIP DISTRIBUTION PERCENTAGES

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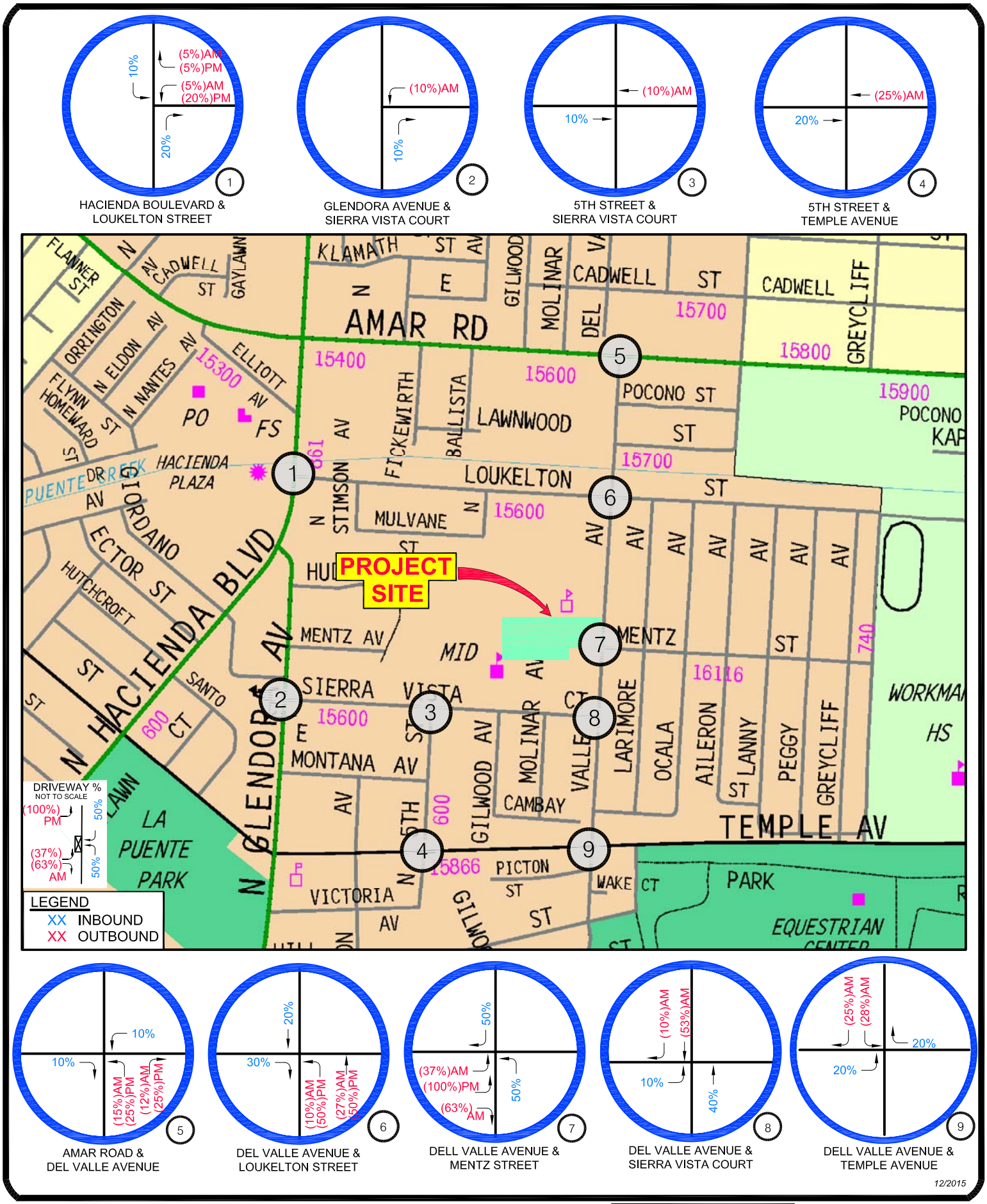

EXISTING USE
TRIP DISTRIBUTION PERCENTAGES
BASED ON PHYSICAL COUNTS AT DRIVEWAY

FIGURE 5 b

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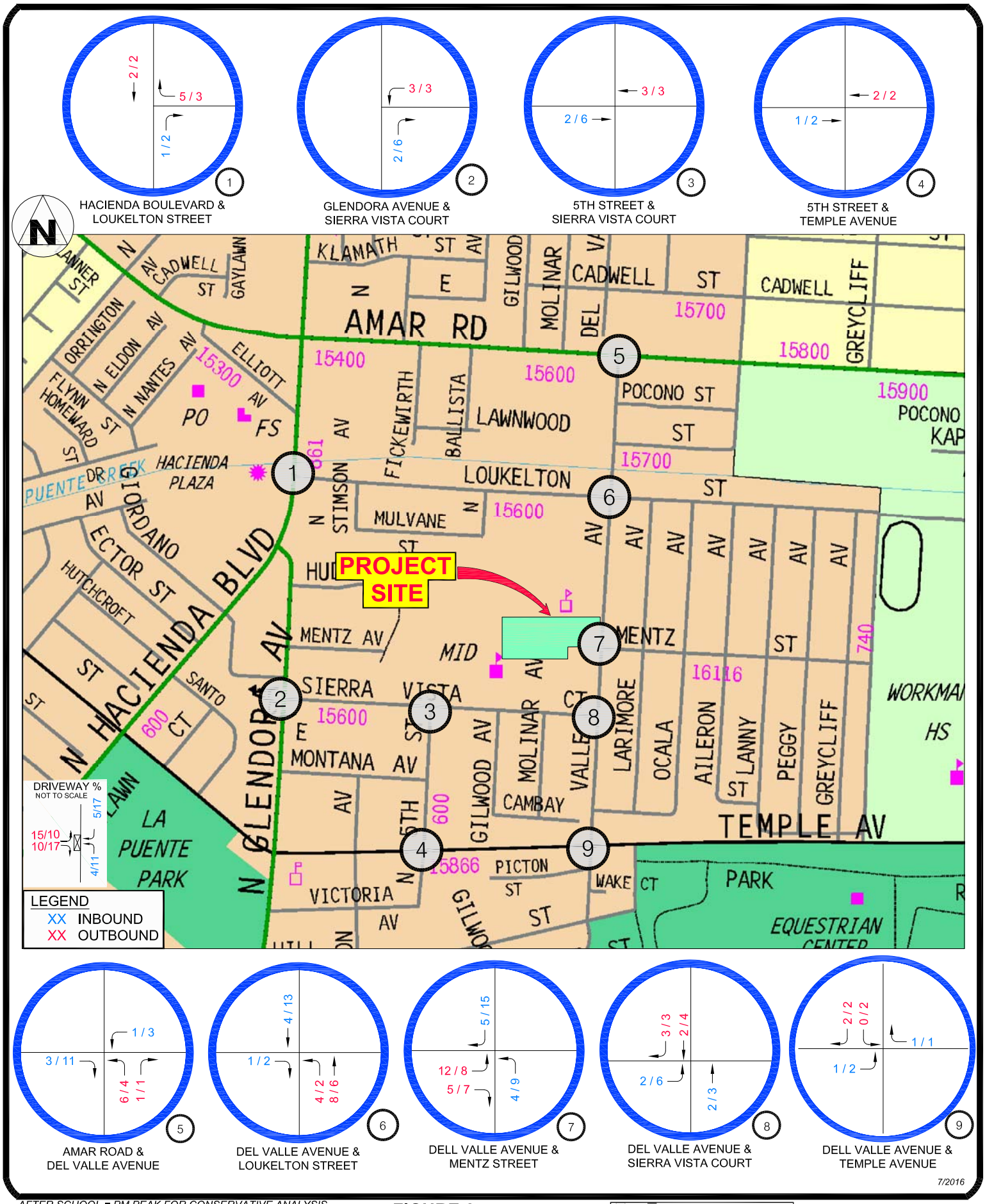

AFTER SCHOOL = PM PEAK FOR CONSERVATIVE ANALYSIS

FIGURE 6

NET PROJECT TRIPS (NEW-EXISTING)
AM PEAK HOUR/PM PEAK HOUR

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Parking, Access & Circulation

The Project proposes to comply with the City of La Puente Municipal Code (Municipal Code) requirement 10.30, Table 3-3. The City of La Puente requires parking based on the number of bedrooms for residential multi-family units with guest parking required based on the number of bedrooms. A bachelor unit requires one space per unit in a garage plus one guest space for every two units. A one to three-bedrooms unit requires two spaces per unit in a garage plus one guest space for every two units. A four or more bedroom units requires two parking spaces per unit in a garage plus one guest space per unit. Single family homes require two parking spaces per unit in a garage with a requirement of one guest space per five or more bedroom units. The Project is made up of a mix of unit sizes. These units are technically condominium units with no adjoining walls. None of the units will be over a three-bedroom unit. Table 3 displays the parking requirements for the Project. The Project proposes to meet the Municipal Code parking requirement for the Project with a minimum of 113 vehicle parking spaces.

Table 3
La Puente Code Required
Vehicle Parking

Land Use	Size		Parking Code	# of Spaces Required
Residential				
Single Family Homes	45	units	2 per unit	90
Guest			1 per 2 units	23
TOTAL				**113**

The Project parking will be provided in individual garages for each of the residential units. Guest parking would be provided on surface parking spaces off of the internal roadway system. The Project will meet the Municipal Code requirements for parking.

All parking would be accessed through an internal roadway circulation system. The community roadway system vehicular access would be from a single driveway off of Del

Valle Avenue at the southern boundary of the Project site. The driveway will be across from the terminus of Mentz Street. The centerline of the Project driveway will be approximately 4 feet north of the centerline of Mentz Street. The intersection of Del Valle Avenue and Mentz Street is an all-way stopped intersection with no visibility impairments.

No parking or access impacts are anticipated.

Analysis of Existing Traffic Conditions

Traffic volume data used in the following peak hour intersectional analysis were based on traffic counts conducted by National Data and Survey Services, an independent traffic data collection company. Traffic counts were conducted on Tuesday, November 3, 2015. This was a typical weekday when there were no holidays, no rain and schools were in session. Traffic counts were conducted during the 7 to 9 AM morning peak and 4 to 6 PM evening peak hours to coincide with the peak commute hours at two of the nine study intersections. Traffic counts were conducted from 7 to 9 AM during the morning peak and 2 to 6 PM during the after school afternoon peak and 4 to 6 PM evening peak at seven of the nine study intersections to coincide with the peak commute hours and capture the afternoon after school peak period at those intersections most likely affected by afterschool activity. The highest single hour during each of the peak periods was used in this analysis. Data collection worksheets for the peak hour counts are contained in Appendix D. Existing traffic counts are provided on the following pages in Figure 7, 8 and 9 for the AM, After School and PM peak hours respectively.

The Intersection Capacity Utilization (ICU) and Highway Capacity Manual (HCM) methods of analysis were used for the analysis as required by La Puente/Los Angeles County. Synchro Version 8 was utilized to perform the intersection analysis. The study intersections were evaluated using ICU for signalized intersections and HCM for unsignalized intersections pursuant to the criteria established by the City La Puente. The existing peak hour traffic counts of vehicles, pedestrians and cyclists were used along with intersection lane configurations and traffic controls to determine an intersection's current operating condition.

The ICU procedure uses a ratio of an intersection's traffic volume to its capacity for rating an intersection's congestion level. The highest combinations of conflicting traffic volume (V) at an intersection are divided by the lanes intersection capacity value. Intersection capacity (C) represents the maximum volume of vehicles that have a reasonable

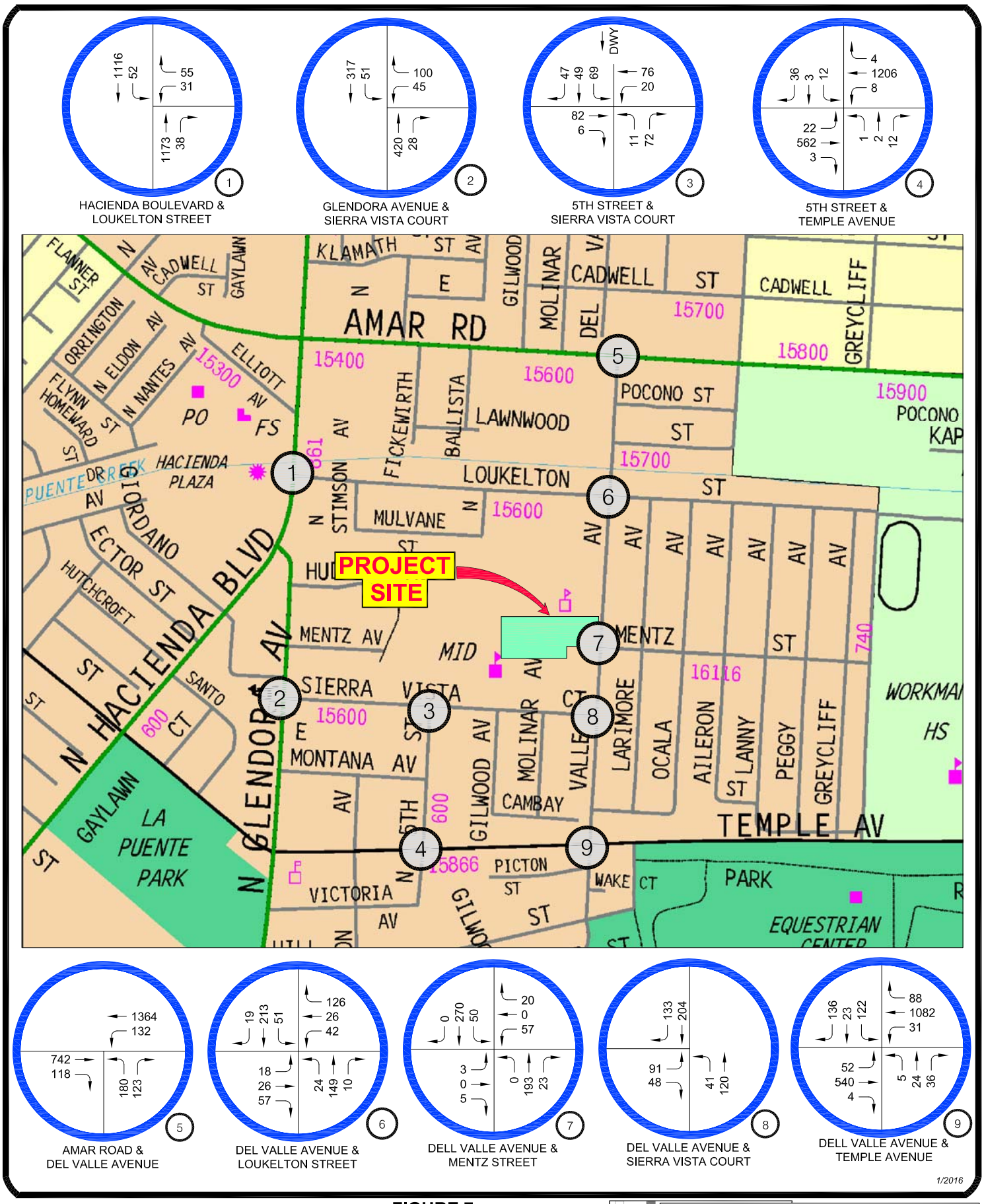

FIGURE 7

EXISTING TRAFFIC VOLUMES
AM PEAK HOUR

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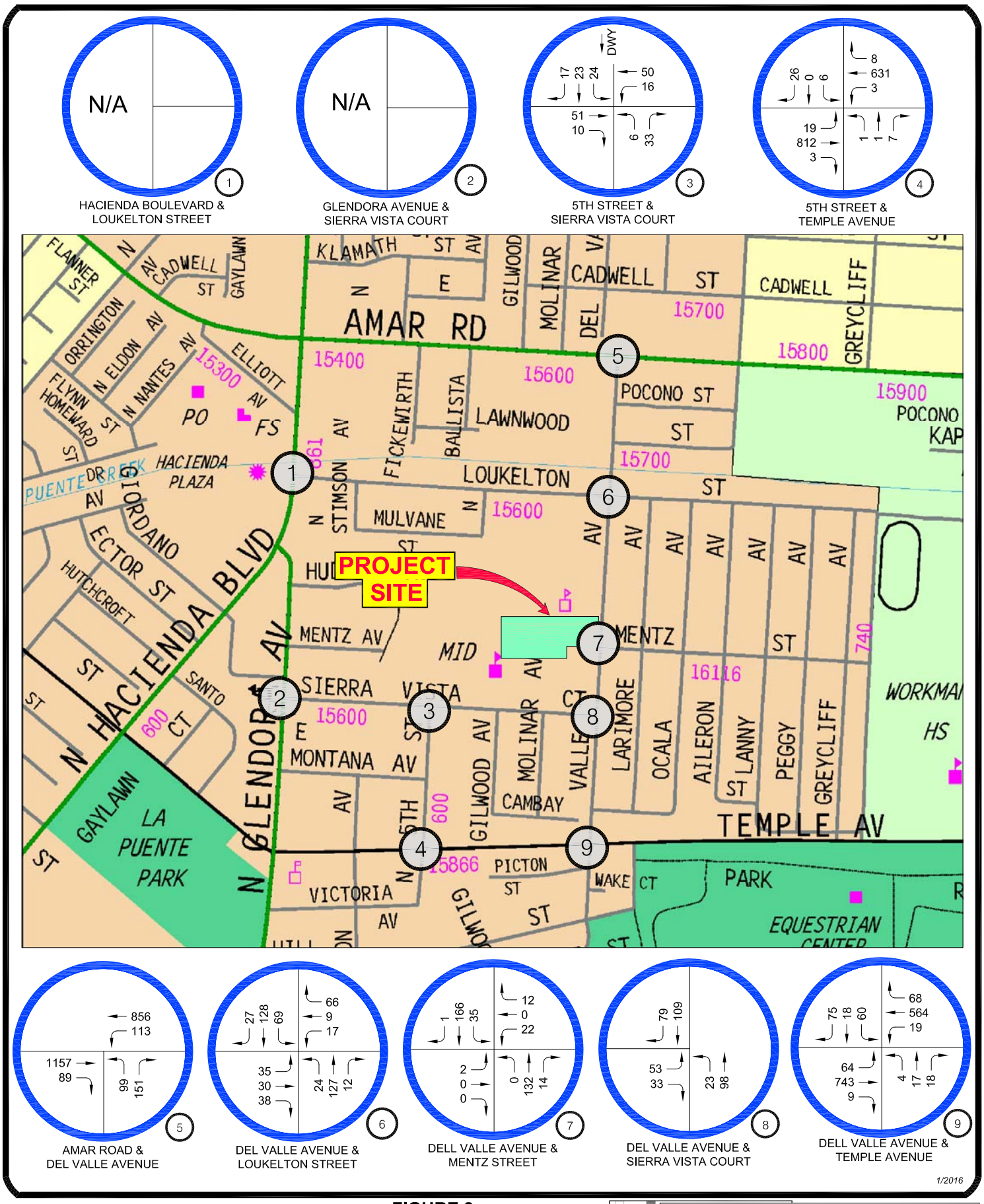

FIGURE 8

EXISTING TRAFFIC VOLUMES
AFTER SCHOOL PEAK HOUR

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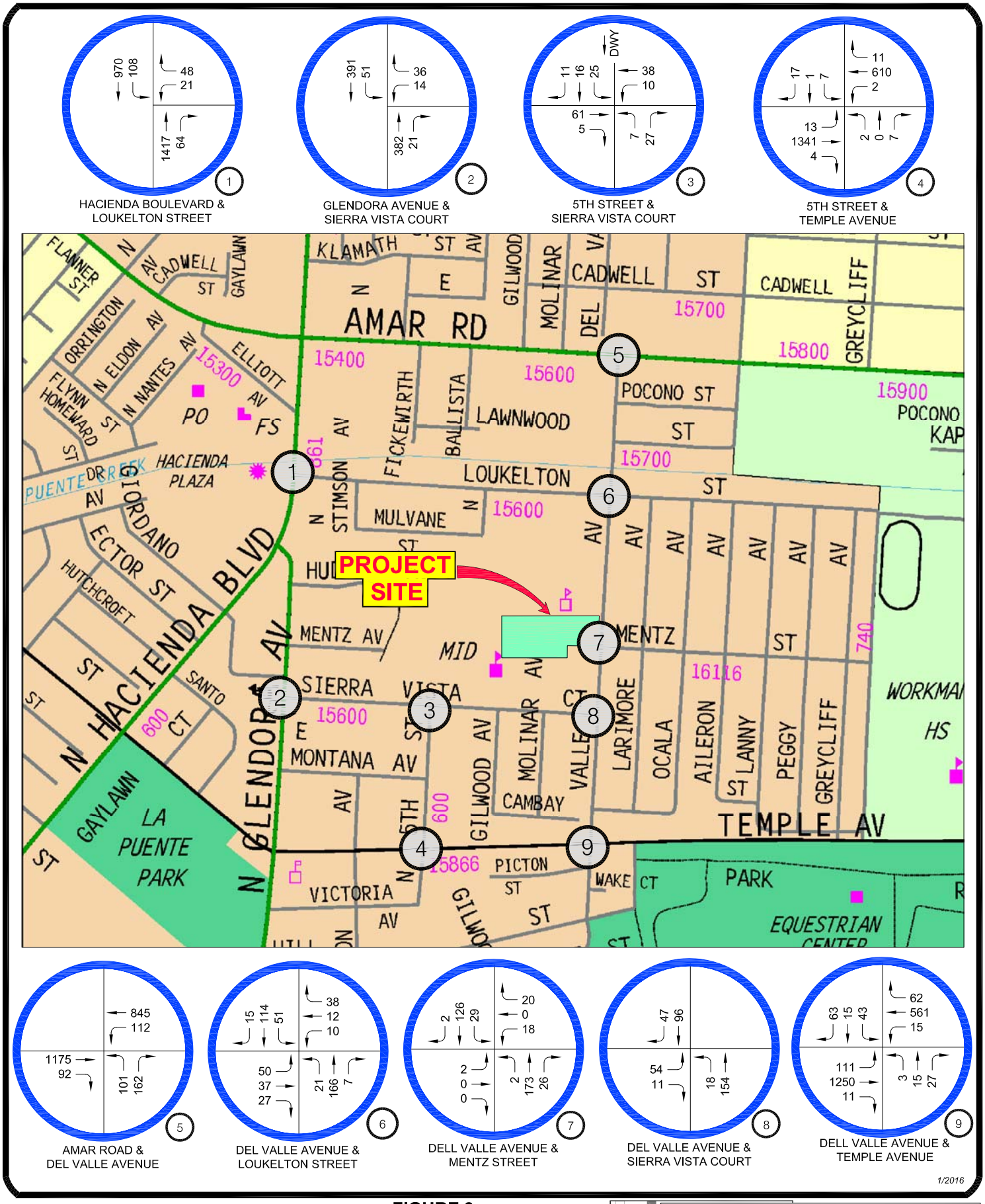

FIGURE 9

EXISTING TRAFFIC VOLUMES
PM PEAK HOUR

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expectation of passing through an intersection in one hour under typical traffic flow conditions.

The HCM methodology for two-way and four-way stopped intersections evaluates the amount of delay based upon the intersection traffic volumes. The minor streets and driveways typically provide access to residential or business areas. The major road traffic is typically operating free-flow with the exception of right and left turns. Operation performance (delay) is measured based upon the traffic volume. The average overall performance (delay) is evaluated for all-way stopped intersections and the highest delay approach (delay) is evaluated for the intersections when only the minor street is stopped.

Once the ICU/HCM value has been calculated, operating characteristics are assigned a level of service grade (A through F) to estimate the level of congestion and stability of traffic flow. The term "Level of Service" (LOS) is used by traffic engineers to describe the quality of traffic flow. Definitions of the LOS grades and definitions are shown in Table 4a for signalized locations and 4b for unsignalized locations.

Table 4a
Level of Service (LOS) Definitions
Signalized Locations

LOS	ICU Value	Definition
A	≤ 0.55	Primarily free-flow operations with average travel speeds approximately 90% of the free flow speed. No approach is fully utilized with little or no delay.
B	>0.55 – 0.64	Reasonably unimpeded operations at average travel speeds, usually 70% of the free low speed. Stable conditions.
C	>0.64 – 0.73	Stable conditions continue. Loading is intermittent. Occasionally drivers may experience delays. Average lower speeds at about 50% of the free flow speed.
D	>0.74 – 0.82	Small increases in traffic flow may cause a substantial increase in delay. Approaching instability. Delays may be lengthy during short times within the peak hour.
E	>0.82 – 0.91	Characterized by significant delays. At or near capacity with possible long queues.
F	>1.00	Gridlock conditions with stoppages of long duration.

Table 4b
Level of Service Definitions
Unsignalized Locations

Level of Service	Delay (seconds)	Definition
A	Less than or equal to 10	Free flow, no delay
B	10 – 15	Reasonably free flow, little to no delay
C	16 – 25	Stable flow, at or near free flow, little delay
D	26 – 35	Approaching unstable flow, delay increasing
E	36 – 50	Unstable flow, operating at capacity, periodic long delay
F	Greater than 50	Forced or breakdown flow, long delay

By applying the ICU procedures to the signalized intersections data, the V/C and the corresponding Levels of Service (LOS) for existing traffic conditions were determined at the study intersections. By applying the HCM procedures to the unsignalized locations, the delay and corresponding LOS for the existing conditions were determined and the unsignalized study intersections.

The existing ICU/Delay and corresponding LOS values at the study intersections are summarized in Table 5. Supporting capacity worksheets are contained in Appendix H of this report.

Table 5
Level of Service for Existing Conditions

No.	Intersection	Peak Hour	(a) Existing ICU/Delay	LOS	Dir
1.	Hacienda Bl &	AM	261.4	F	WB
	Loukelton St	PM	226.5	F	WB
2.	Glendora Av &	AM	17.0	C	WB
	Sierra Vista Ct	PM	12.1	B	WB
3.	5th Street &	AM	9.5	A	
	Sierra Vista Ct	School PM	7.8	A	
		PM	7.7	A	
4.	5th Street &	AM	73.9	F	SB
	Temple Av	School PM	19.3	C	NB
		PM	33.6	D	NB
5.	*Amar Rd &*	*AM*	*0.722*	*C*	
	Del Valle Av	*School PM*	*0.750*	*D*	
		PM	*0.744*	*D*	
6.	Del Valle Av &	AM	14.2	C	
	Loukelton St	School PM	9.7	A	
		PM	9.6	A	
7.	Del Valle Av &	AM	12.1	B	
	Mentz St	School PM	8.8	A	
		PM	8.8	A	
8.	Del Valle Av &	AM	20.0	C	EB
	Sierra Vista Ct	School PM	11.7	B	EB
		PM	11.8	B	EB
9.	*Del Valle Av &*	*AM*	*0.787*	*D*	
	Temple Av	*School PM*	*0.556*	*B*	
		PM	*0.698*	*C*	

Intersections 5 & 9 are signalized locations (ICU)

Intersections 1, 2, 4 & 8 are stopped at the minor street only (Delay)

Intersections 3, 6, & 7 are all way stopped intersections (Delay)

DIR = Direction of highest delay

Analysis of Existing + Project Conditions

An evaluation has been conducted to evaluate potential Project impacts to the existing conditions. According to the standards adopted by Los Angeles County and used by the City of La Puente, a traffic impact is considered significant if the related increase in the V/C value equals or exceeds the thresholds shown in the Table 6a below at signalized locations or creates a delay increase as indicated in Table 6b at unsignalized locations.

Table 6a
Significant Impact Criteria - Signalized Locations

INTERSECTIONS		
Pre Project		Project V/C Increase
LOS	V/C	
C	0.64 – 0.73	0.04 or more
D	0.73 – 0.82	0.02 or more
E/F	0.82 or more	0.01 or more

No significant impacts occur at LOS A or B because intersections operations are good and can accommodate additional traffic growth.

Table 6b
Significant Impact Criteria - Unsignalized Locations

Pre Project Conditions	With Project Conditions	Requirement
Acceptable LOS A- D	Unacceptable LOS E or F	Mitigate back to at Least LOS D
Unacceptable LOS E or F	Growth of 1% or More	Mitigate to less than 1% growth

The potential impact for existing plus Project was conducted by adding the net Project traffic to the existing traffic. The existing and existing + Project traffic conditions were compared to determine if the thresholds of significance in Table 6a or 6b, as applicable, were exceeded. As noted in Table 7 on page 28, no significant impacts occur when the Project's traffic generation is added to the existing conditions. Details of the analysis are provided on worksheet in Appendix H.

Table 7
Traffic Conditions for Existing + Project

No.	Intersection	Peak Hour	(a) Existing ICU/Delay	LOS	Dir	(b) Existing +Project ICU/Delay	LOS	Impact	% Impact*	Significant Impact
1.	Hacienda Bl &	AM	261.4	F	WB	263.4	F	+ 2.0	0.8%	NO
	Loukelton St	PM	226.5	F	WB	226.5	F	+ 0.0	0.0%	NO
2.	Glendora Av &	AM	17.0	C	WB	17.4	C	+ 0.4		NO
	Sierra Vista Ct	PM	12.1	B	WB	12.4	B	+ 0.3		NO
3.	5th Street &	AM	9.5	A		9.5	A	+ 0.0		NO
	Sierra Vista Ct	School PM	7.8	A		7.9	A	+ 0.1		NO
		PM	7.7	A		7.8	A	+ 0.1		NO
4.	5th Street &	AM	73.9	F	SB	74.6	F	+ 0.7	0.9%	NO
	Temple Av	School PM	19.3	C	NB	19.4	C	+ 0.1		NO
		PM	33.6	D	NB	33.7	D	+ 0.1		NO
5.	*Amar Rd &*	*AM*	*0.722*	*C*		*0.727*	*C*	*+ 0.005*		*NO*
	Del Valle Av	*School PM*	*0.750*	*D*		*0.755*	*D*	*+ 0.005*		*NO*
		PM	*0.744*	*D*		*0.749*	*D*	*+ 0.005*		*NO*
6.	Del Valle Av &	AM	14.2	C		14.7	C	+ 0.5		NO
	Loukelton St	School PM	9.7	A		9.9	A	+ 0.2		NO
		PM	9.6	A		9.8	A	+ 0.2		NO
7.	Del Valle Av &	AM	12.1	B		13.1	B	+ 1.0		NO
	Mentz St	School PM	8.8	A		9.1	A	+ 0.3		NO
		PM	8.8	A		9.1	A	+ 0.3		NO
8.	Del Valle Av &	AM	20.0	C	EB	20.5	C	+ 0.5		NO
	Sierra Vista Ct	School PM	11.7	B	EB	11.9	B	+ 0.2		NO
		PM	11.8	B	EB	12.0	B	+ 0.2		NO
9.	*Del Valle Av &*	*AM*	*0.787*	*D*		*0.790*	*D*	*+ 0.003*		*NO*
	Temple Av	*School PM*	*0.556*	*B*		*0.559*	*B*	*+ 0.003*		*NO*
		PM	*0.698*	*C*		*0.701*	*C*	*+ 0.003*		*NO*

Intersections 5 & 9 are signalized locations (ICU)

Intersections 1, 2, 4 & 8 are stopped at the minor street only (Delay)

Intersections 3, 6, & 7 are all way stopped intersections (Delay)

DIR = Direction of highest delay

* % Impact presented when Delay at minor street stopped intersections is at LOS E or F

Analysis of Future Traffic Conditions

Future traffic volume projections have been developed to analyze the traffic conditions after completion of other planned land developments including the proposed Project. Pursuant to the City of La Puente requirements, the following steps have been taken to develop the future traffic volume estimate:

Preceding Existing Traffic Analysis

(a) Existing Conditions: Existing traffic with new counts conducted Tuesday November 3, 2015 conditions;

(b) Existing + Project: Project traffic was added to the Existing conditions in (a) for the Existing +Project traffic conditions to determine potential impacts;

Future Analysis

(c) Future Existing + Ambient: Existing Traffic in (a) + ambient growth (0.46 % per year increase to year 2018);

(d) Future Without Project (Existing + Ambient + Cumulative Project) Traffic: Traffic volumes in (c) + 31 cumulative projects' traffic in the area, and;

(e) Future With Project (Existing + Ambient + Cumulative Projects+ Project): Traffic in (d) with the Project Traffic added to determine potential impacts.

The ambient growth rate of 0.46% per year for a total of 1.4% was determined for the Project completion year 2018 based upon 2010 Los Angeles County Congestion Management Plan (CMP). The CMP identifies the City of La Puente as part of Regional Service Area (RSA) number 26. RSA 26 has been identified with a growth increase of 2.3% between 2015 and 2020. This equates to 0.46% per year and 1.38% over a three-year period between 2015 and 2018. An excerpt page from the CMP displaying the RSA growth rates is provided in Appendix E.

The ambient growth rate was added to the Existing traffic to determine the Future 2018 traffic conditions prior to the construction of other projects in the area (cumulative projects) and the proposed Project. Table 8 displays these future conditions without the

proposed Project or cumulative projects. Details of the analysis are provided on worksheet in Appendix H.

Table 8
Intersection Operating Conditions
Existing + Ambient Growth Summary

No.	Intersection	Peak Hour	(c) Future (2018) With Ambient Growth ICU/Delay	LOS	Dir
1.	Hacienda Bl &	AM	164.8	F	WB
	Loukelton St	PM	353.5	F	WB
2.	Glendora Av &	AM	14.6	B	WB
	Sierra Vista Ct	PM	12.0	B	WB
3.	5th Street &	AM	8.0	A	
	Sierra Vista Ct	School PM	7.3	A	
		PM	7.3	A	
4.	5th Street &	AM	50.7	F	SB
	Temple Av	School PM	19.0	C	NB
		PM	34.5	D	NB
5.	*Amar Rd &*	*AM*	*0.732*	*D*	
	Del Valle Av	*School PM*	*0.759*	*D*	
		PM	*0.753*	*D*	
6.	Del Valle Av &	AM	10.9	B	
	Loukelton St	School PM	9.3	A	
		PM	9.2	A	
7.	Del Valle Av &	AM	10.2	B	
	Mentz St	School PM	8.4	A	
		PM	8.4	A	
8.	Del Valle Av &	AM	14.6	B	EB
	Sierra Vista Ct	School PM	10.9	B	EB
		PM	11.1	B	EB
9.	*Del Valle Av &*	*AM*	*0.796*	*D*	
	Temple Av	*School PM*	*0.560*	*B*	
		PM	*0.705*	*C*	

Intersections 5 & 9 are signalized locations (ICU)

Intersections 1, 2, 4 & 8 are stopped at the minor street only (Delay)

Intersections 3, 6, & 7 are all way stopped intersections (Delay)

DIR = Direction of highest delay

The future cumulative analysis includes other reasonable foreseeable development projects located within the study area that are either under construction or brought to the attention of the City as planned for future development. As part of this analysis, the related project information was requested from the City of La Puente, City of Industry, and Los Angeles County. A total of 31 cumulative projects have been identified in the Project area. A location and description of these projects is provided in Table 9. To evaluate the future traffic conditions with the cumulative projects, estimates of peak hour trips are developed using standard ITE rates. The potential net increase in traffic from the cumulative projects is shown in Appendix F. These cumulative project trips are distributed to the study intersections where relevant.

Any actions taken by the City regarding this Project would not have a direct bearing on the approval or denial of other proposed development projects. The location of the related project is presented in Figure 10.

Table 9
List of Cumulative Projects

#	Project	Size		Location	City
1	Grocery Store	18,055	sf	1545 Hacienda Bl	La Puente
2	Single Family Homes	5	units	N Side Sierra Vista west of 5th Street	La Puente
3	Single Family Homes	5	units	1068 Larimore	La Puente
4	Industrial Building	125,344	sf	15000 Nelson	West Covina
5	2 Industrial Buildings	130,170	sf	489&499 Parriott Pl	Industry
6	5 Industrial Buildings	614,597	sf	SEC Azusa & Chestnut	Industry
7	Addition to existing Industrial Building	8,850	sf	18421 Railroad Av	Industry
8	Office Building	77,250	sf	12851 Crossroads Pkwy S	Industry
9	Warehouse & Office	36,666	sf	3718 Capitol Avenue	Industry
10	Replace Auto Center w/ Retail w drive thru	20,621	sf	1552 Azusa Av	West Covina
11	Rail Maintenance Bldg	6,760	sf	17225 Arenth Av	La Puente
12	Fast Food Restaurant	2,492	sf	Castleton	La Puente

Table 9 (continued)
List of Cumulative Projects

#	Project	Size		Location	City
13	2nd Unit	1	unit	16138 Balckwood St	Unincorporated County
14	2nd Unit	1	unit	1300 Larimore Av	Unincorporated County
15	2nd Unit	1	unit	403 Coberta Avenue	Unincorporated County
16	TI Existing Retail	2,825	sf	907 N Sunset Av	Unincorporated County
17	Restaurant*	2,000	sf	13009 Valley Bl	Unincorporated County
18	2nd Unit	1	unit	527 Giano Av	Unincorporated County
19	Single Family Homes	6	units	1126 Willow Ave	Unincorporated County
20	Single Family Homes	1	unit	14128 Fairgrove Av	Unincorporated County
21	Add unit SFH	1	unit	515 Giano	Unincorporated County
22	Add unit SFH	1	unit	18509 Hurley St	Unincorporated County
23	Duplex	2	units	1132 N Siesta Av	La Puente
24	2nd Unit	1	unit	16122 Meadowside St	Unincorporated County
25	2nd Unit	1	unit	421 S Orange Blossom Av	Unincorporated County
26	Gas Station w minimart*	10	fp	908 N Sunset Av	Unincorporated County
27	2nd Unit	1	unit	15932 Hayland St	La Puente
28	convert Garage Bay* to MiniMart & Store	1,000	sf	1030 S Hacienda Bl	La Puente
29	Temple*	10,000	sf	710 Grand View Lane	Unincorporated County
30	Warehouse to Food Processing*	100,000	sf	507 Coralridge Pl	Unincorporated County
31	Warehouse*	100,000	sf	18249 Valley Bl	Unincorporated County

*Estimated square footage – data was not available
sf = square foot
fp = fuel positions

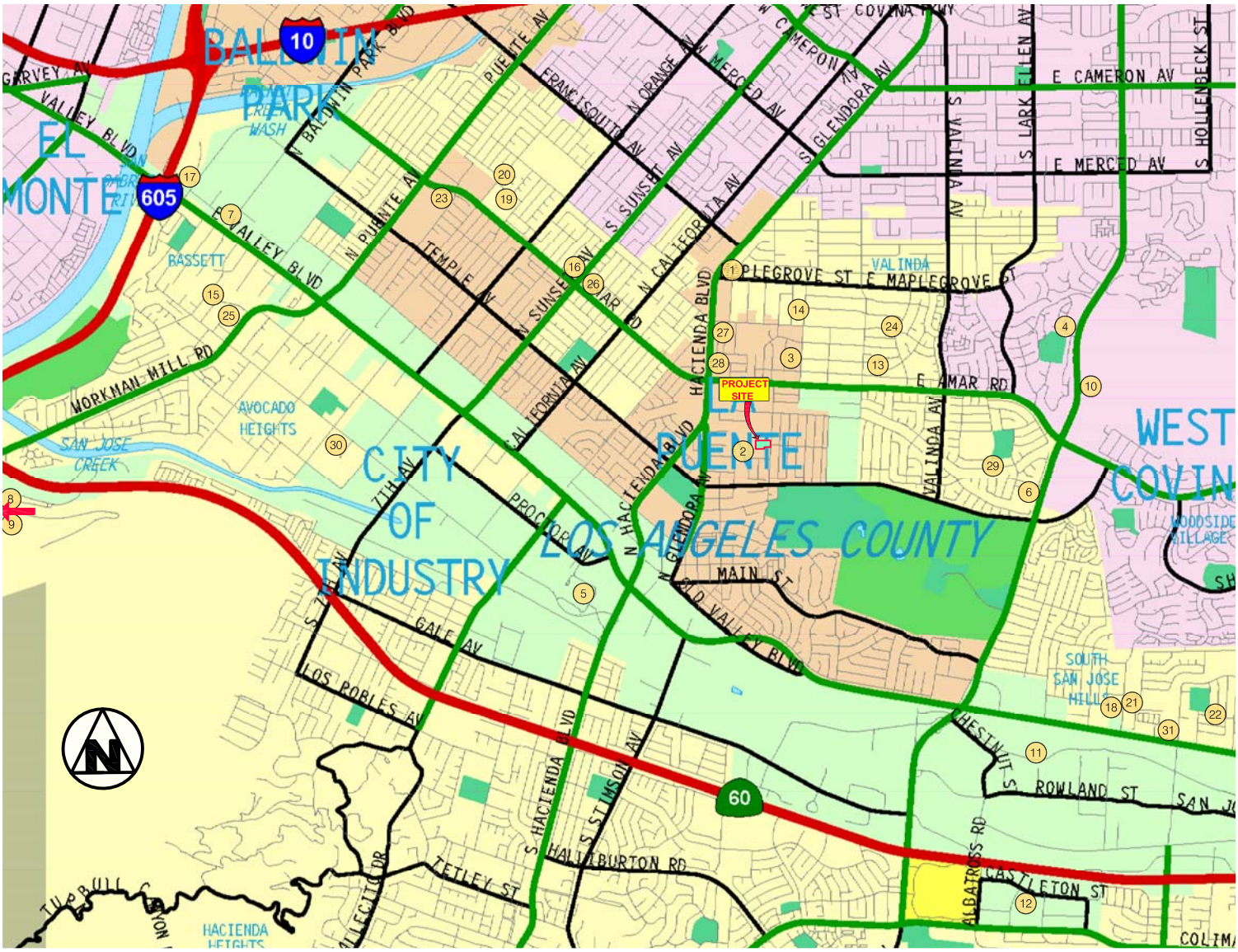

FIGURE 10

7/2016

RELATED PROJECT LOCATIONS

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The cumulative project traffic growth without the proposed Project was added to the Existing + Ambient Growth traffic volumes to determine the full future without Project traffic conditions if all of the cumulative projects are built as described. Table 10 provides a summary of this future traffic condition analysis without the Project. Details of the analysis are provided on worksheet in Appendix H. The traffic volumes associated with the Existing + Ambient Growth + Cumulative Project (Without Project) Summary are displayed in Figure 11 for the AM Peak Hour, Figure 12 for the After School Peak Hour and Figure 13 for the PM Peak Hour.

Table 10
Intersection Operating Conditions
Existing + Ambient + Cumulative Project Summary
Without Project

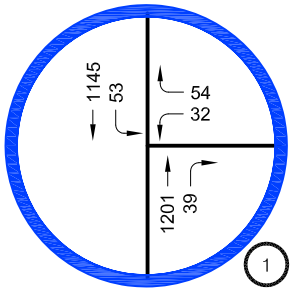
No.	Intersection	Peak Hour	(d) Future (2018) W/ Ambient+Cumulative ICU/Delay	LOS
1.	Hacienda Bl &	AM	186.0	F
	Loukelton St	PM	378.1	F
2.	Glendora Av &	AM	14.8	B
	Sierra Vista Ct	PM	12.0	B
3.	5th Street &	AM	8.0	A
	Sierra Vista Ct	School PM	7.3	A
		PM	7.3	A
4.	5th Street &	AM	51.4	F
	Temple Av	School PM	19.1	C
		PM	34.8	D
5.	*Amar Rd &*	*AM*	*0.742*	*D*
	Del Valle Av	*School PM*	*0.768*	*D*
		PM	*0.765*	*D*
6.	Del Valle Av &	AM	10.9	B
	Loukelton St	School PM	9.3	A
		PM	9.2	A
7.	Del Valle Av &	AM	10.2	B
	Mentz St	School PM	8.4	A
		PM	8.4	A
8.	Del Valle Av &	AM	14.7	B
	Sierra Vista Ct	School PM	10.9	B
		PM	11.2	B
9.	*Del Valle Av &*	*AM*	*0.799*	*D*
	Temple Av	*School PM*	*0.562*	*B*
		PM	*0.707*	*C*

Intersections 5 & 9 are signalized locations (ICU)

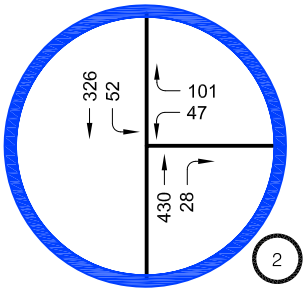
Intersections 1, 2, 4 & 8 are stopped at the minor street only (Delay)

Intersections 3, 6, & 7 are all way stopped intersections (Delay)

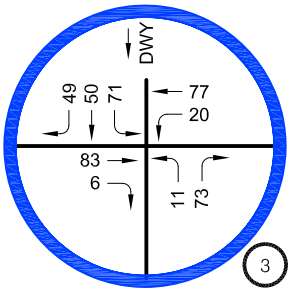
DIR = Direction of highest delay



HACIENDA BOULEVARD &
LOUKELTON STREET



GLENDORA AVENUE &
SIERRA VISTA COURT



5TH STREET &
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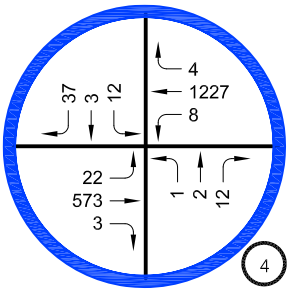
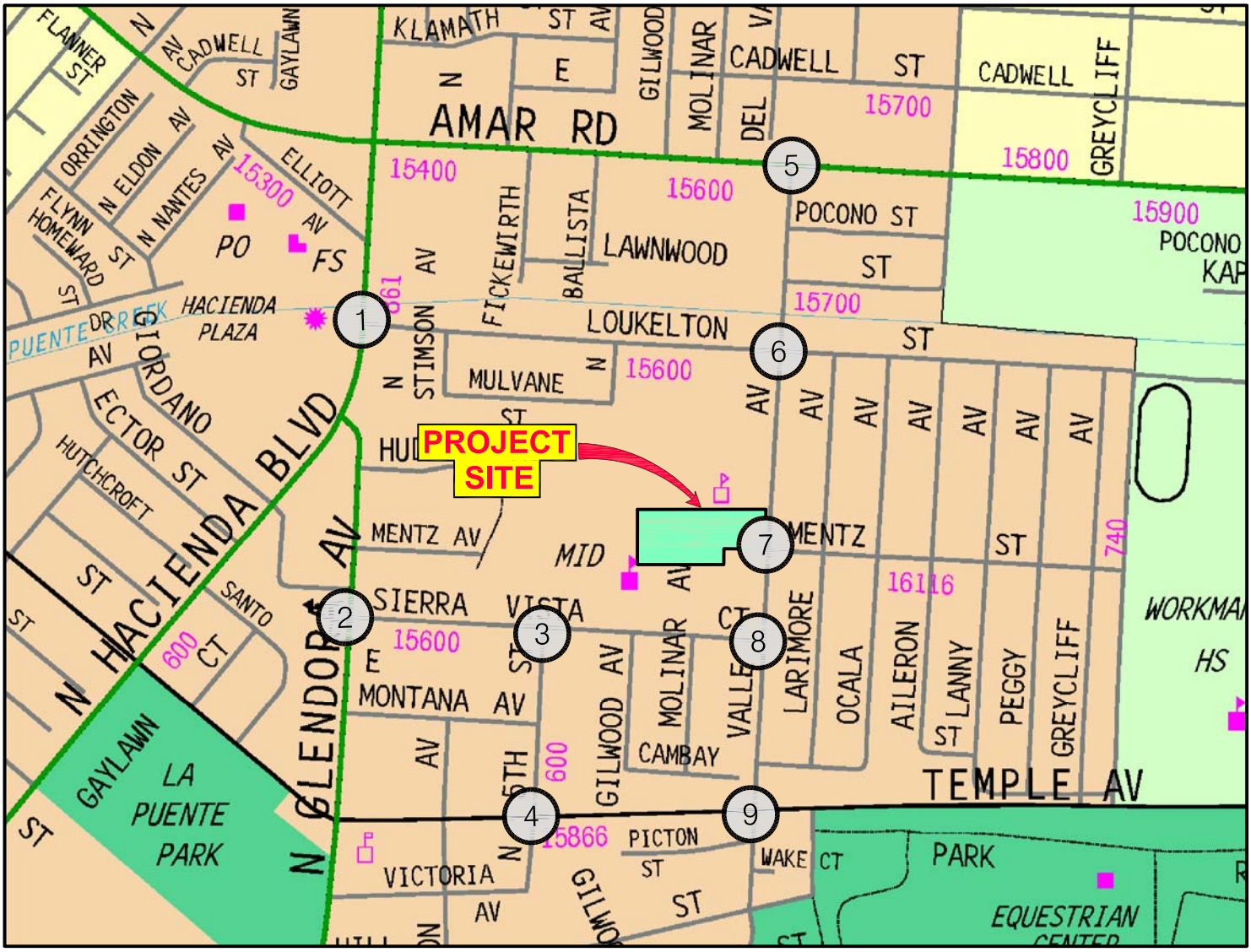
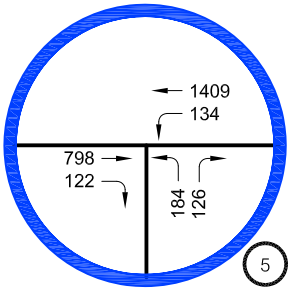
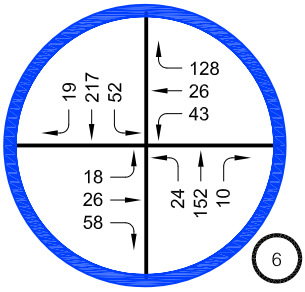


5TH STREET &
TEMPLE AVENUE





AMAR ROAD &
DEL VALLE AVENUE



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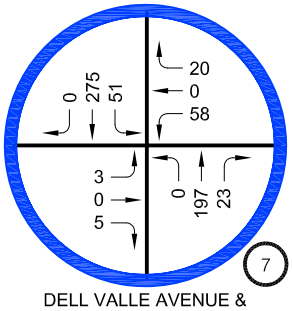
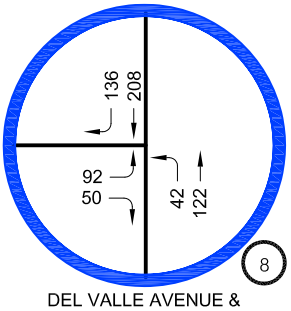
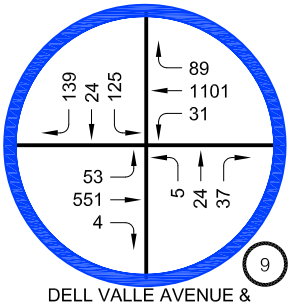


DELL VALLE AVENUE &
MENTZ STREET



DEL VALLE AVENUE &
SIERRA VISTA COURT



DELL VALLE AVENUE &
TEMPLE AVENUE

FIGURE 11

7/2016

FUTURE TRAFFIC VOLUMES WITHOUT PROJECT
EXISTING + AMBIENT GROWTH + CUMULATIVE PROJECTS
AM PEAK HOUR

Overland Traffic Consultants, Inc.
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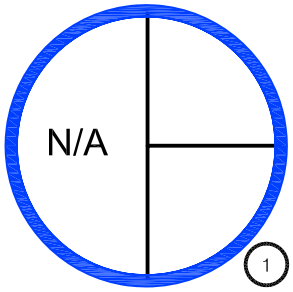
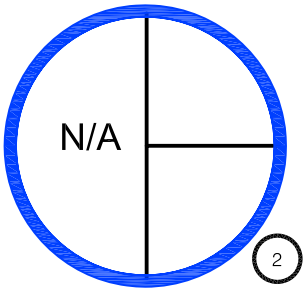
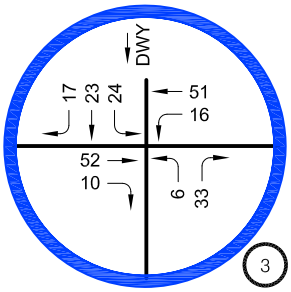


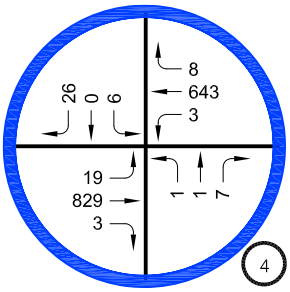
HACIENDA BOULEVARD &
LOUKELTON STREET



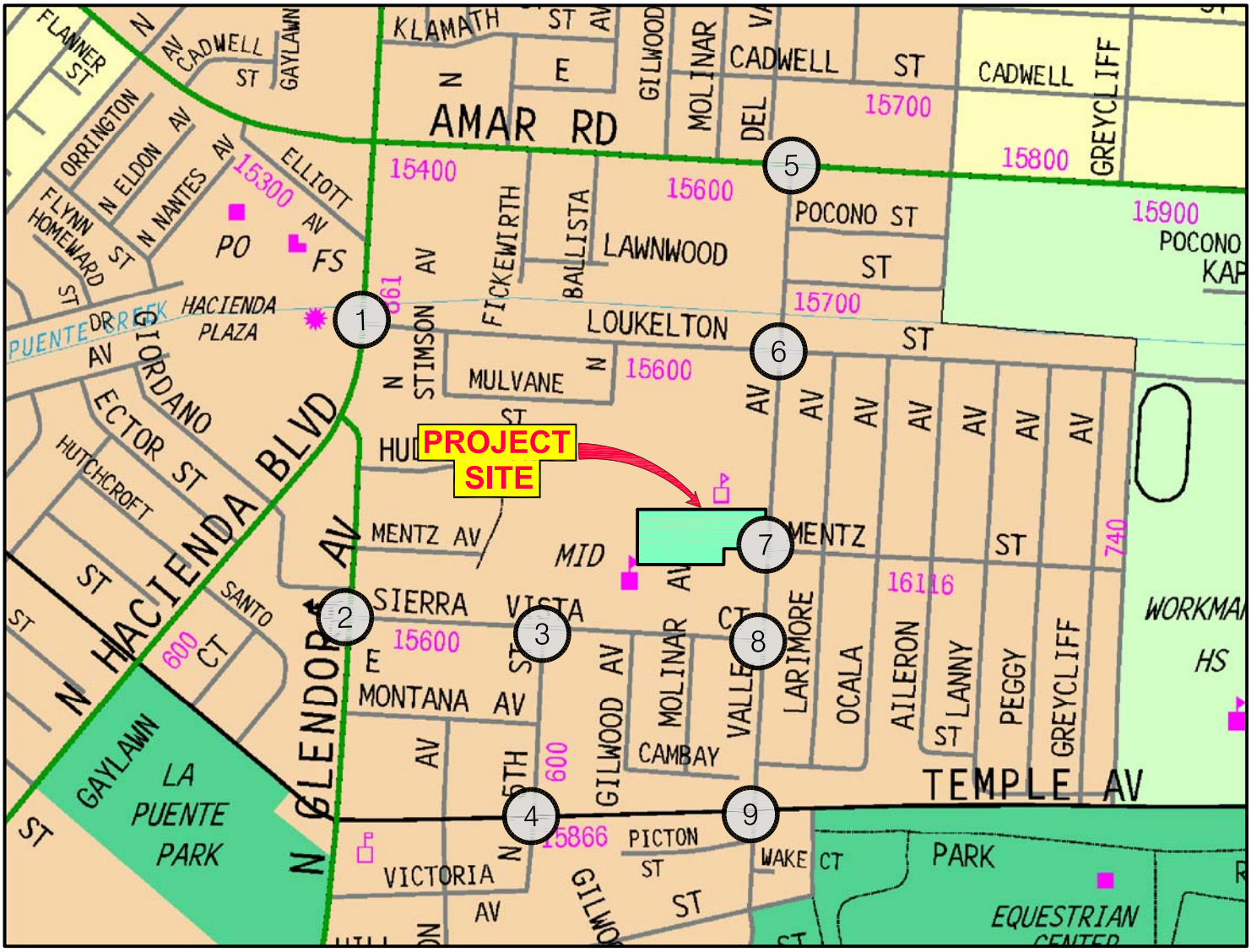
GLENDORA AVENUE &
SIERRA VISTA COURT

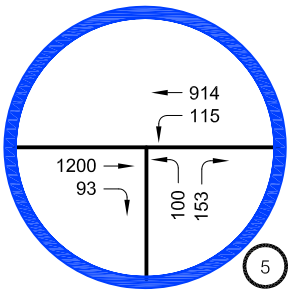


5TH STREET &
SIERRA VISTA COURT

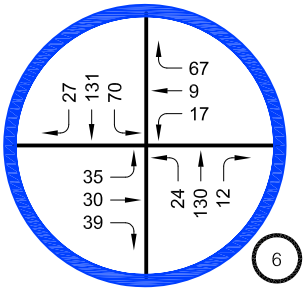


5TH STREET &
TEMPLE AVENUE

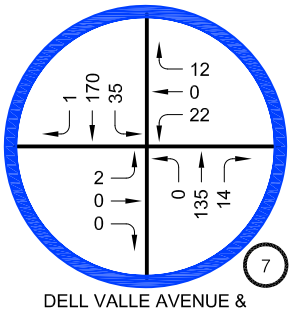




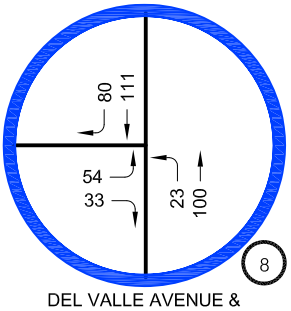
AMAR ROAD &
DEL VALLE AVENUE



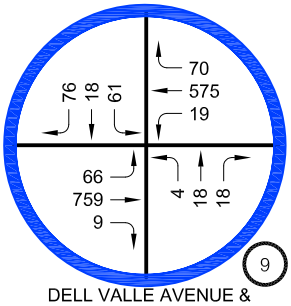
DEL VALLE AVENUE &
LOUKELTON STREET



DELL VALLE AVENUE &
MENTZ STREET



DEL VALLE AVENUE &
SIERRA VISTA COURT



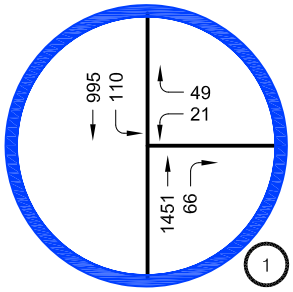
DELL VALLE AVENUE &
TEMPLE AVENUE

FIGURE 12

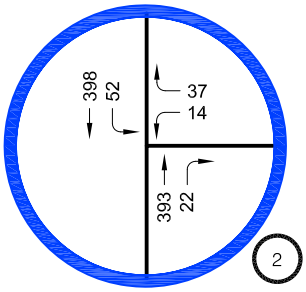
7/2016

FUTURE TRAFFIC VOLUMES WITHOUT PROJECT
EXISTING + AMBIENT GROWTH + CUMULATIVE PROJECTS
AFTER SCHOOL PM PEAK HOUR

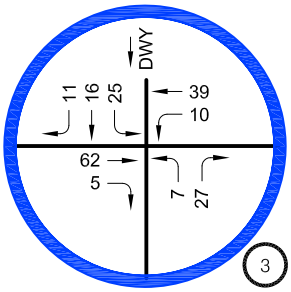
Overland Traffic Consultants, Inc.
952 Manhattan Beach Bl #100, Manhattan Beach Ca 90266
(310)766-5222, (661)799-8423 , liz@overlandtraffic.com



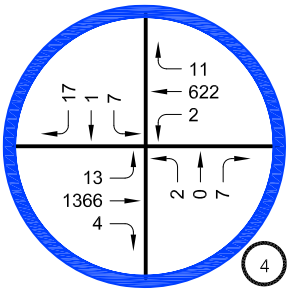
HACIENDA BOULEVARD &
LOUKELTON STREET



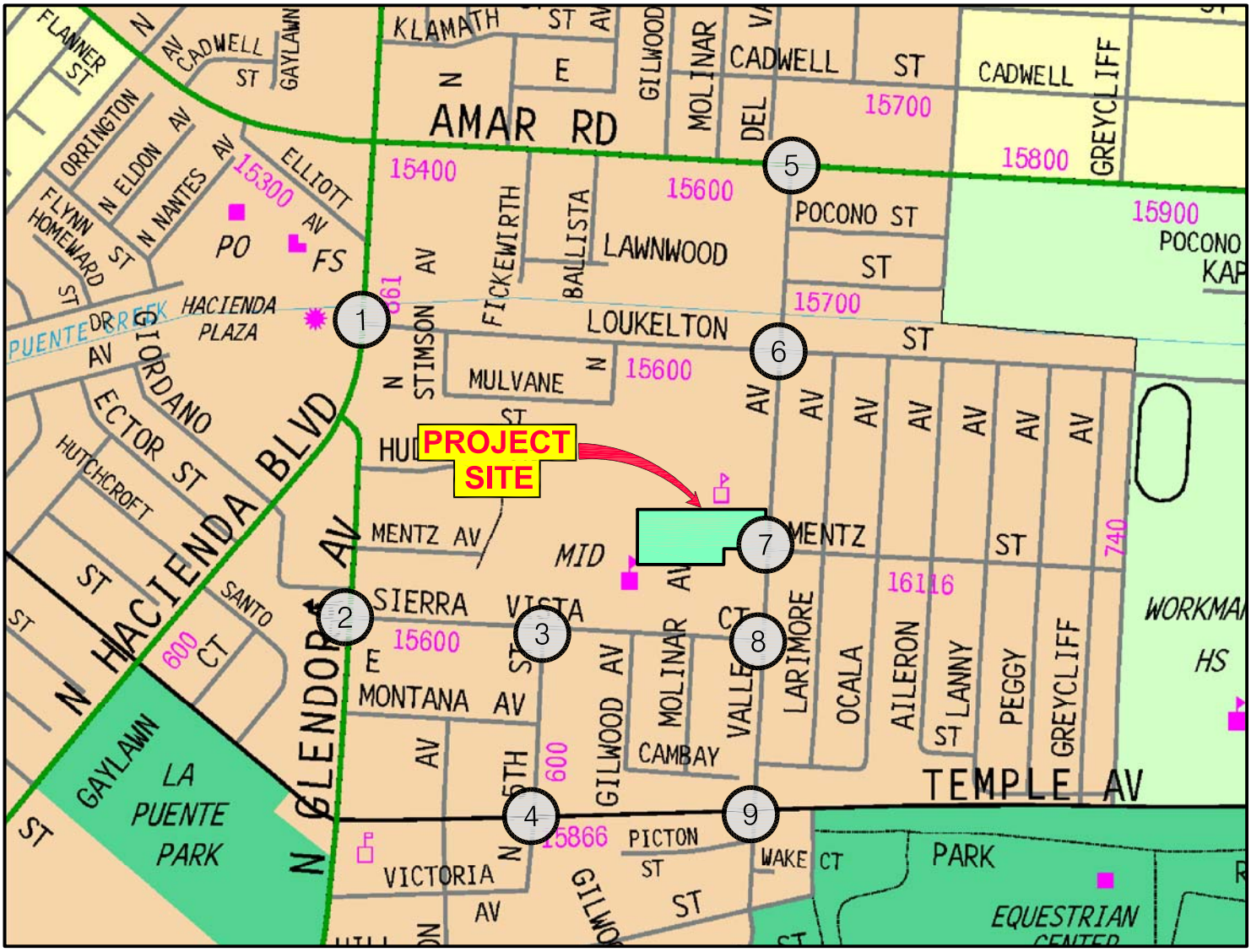
GLENDORA AVENUE &
SIERRA VISTA COURT

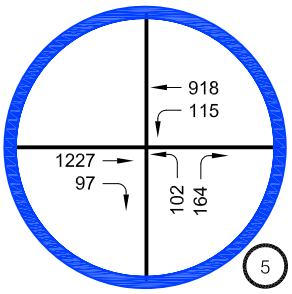


5TH STREET &
SIERRA VISTA COURT

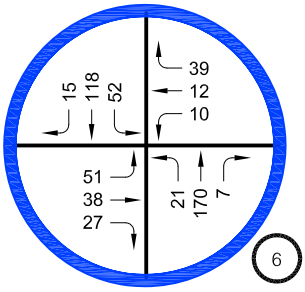


5TH STREET &
TEMPLE AVENUE

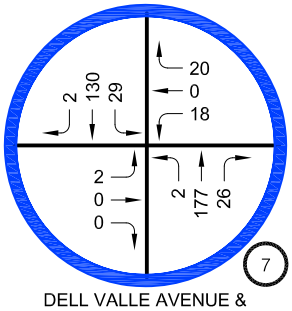




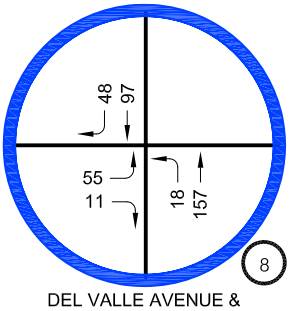
AMAR ROAD &
DEL VALLE AVENUE



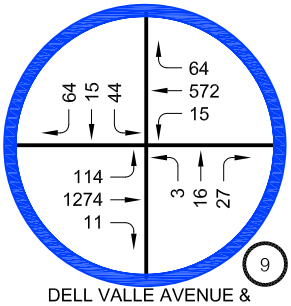
DEL VALLE AVENUE &
LOUKELTON STREET



DELL VALLE AVENUE &
MENTZ STREET



DEL VALLE AVENUE &
SIERRA VISTA COURT



DELL VALLE AVENUE &
TEMPLE AVENUE

FIGURE 13

7/2016

FUTURE TRAFFIC VOLUMES WITHOUT PROJECT
EXISTING + AMBIENT GROWTH + CUMULATIVE PROJECTS
PM PEAK HOUR

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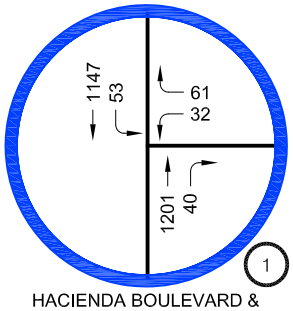
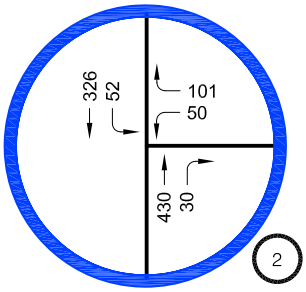
(310)766-5222, (661)799-8423 , liz@overlandtraffic.com

Comparing the changes in the traffic conditions between estimated conditions in the future with Existing + Ambient Growth + Cumulative Projects and future conditions Existing + Ambient Growth + Cumulative Projects + Proposed Project provides the necessary information to determine if proposed Project will create any significant traffic impacts as described previously in Table 6a and 6b on page 27. The Project traffic is the net Project traffic volumes. As shown in Table 11, no significant Project traffic impacts occur at the study intersections.

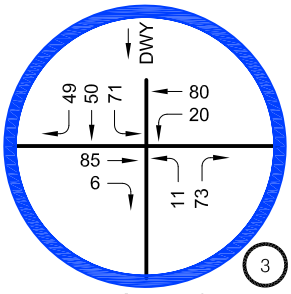
The potential future with Existing + Ambient Growth + Cumulative Projects + Project (With Project) traffic volumes are displayed in Figure 14 for the AM Peak Hour, Figure 15 for the After School PM Peak Hour, and Figure 16 for the PM Peak Hour. Table 11 displays the results of the future cumulative analysis with the Project and the analysis worksheets are provided in Appendix H.



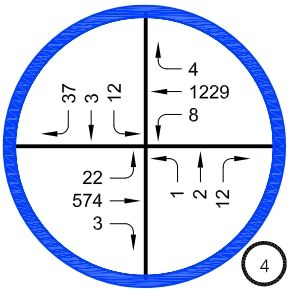
HACIENDA BOULEVARD &
LOUKELTON STREET



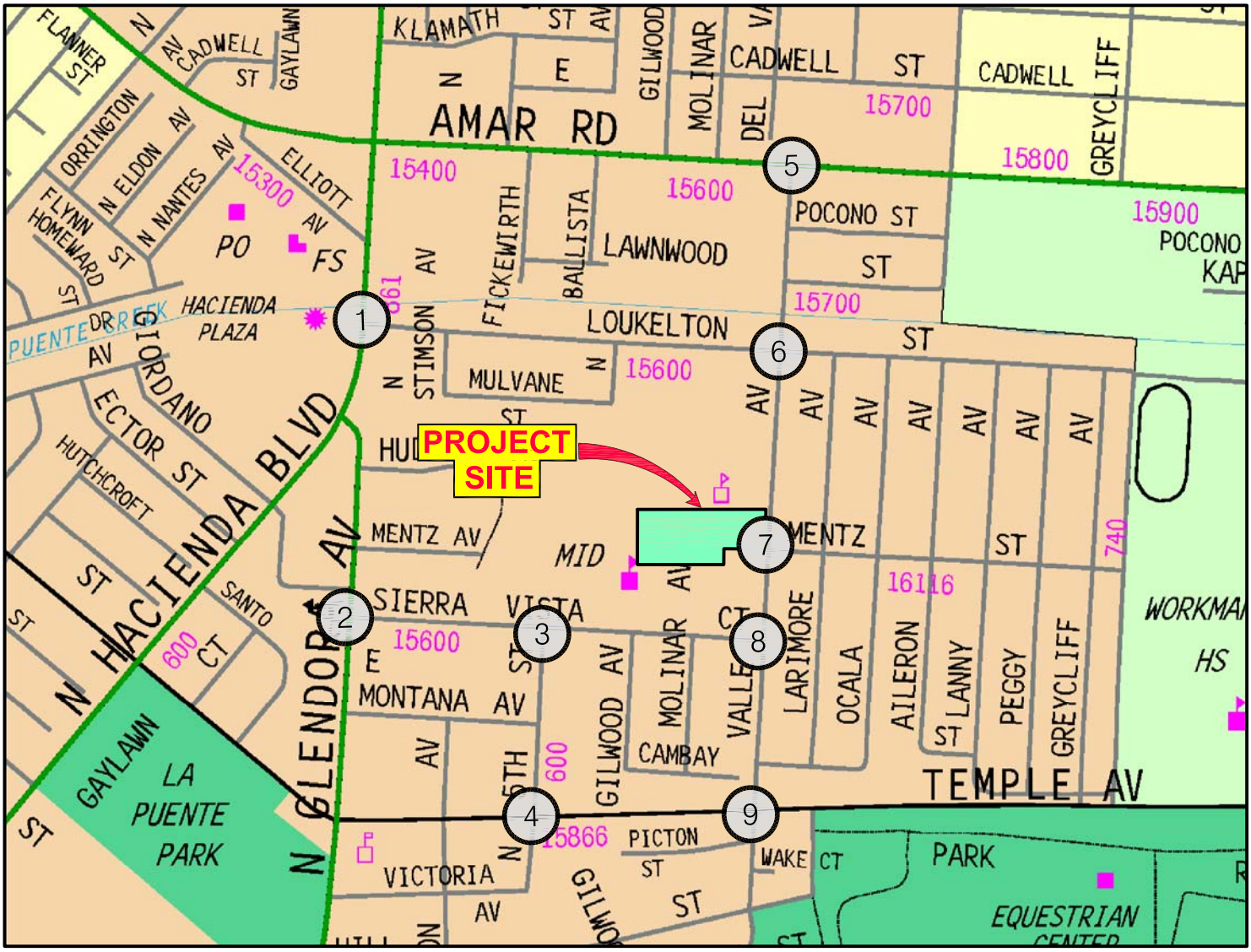
GLENDORA AVENUE &
SIERRA VISTA COURT

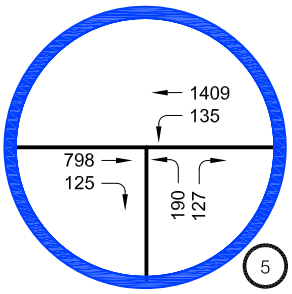


5TH STREET &
SIERRA VISTA COURT

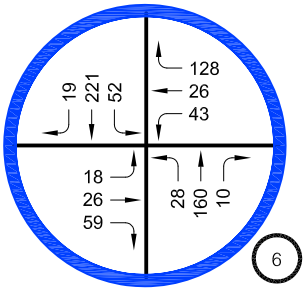


5TH STREET &
TEMPLE AVENUE

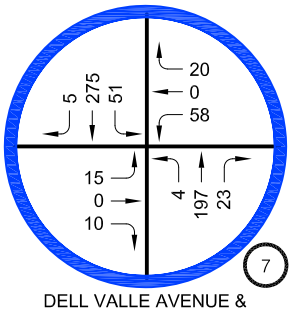




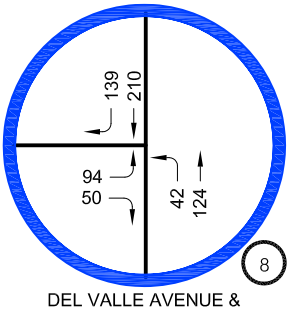
AMAR ROAD &
DEL VALLE AVENUE



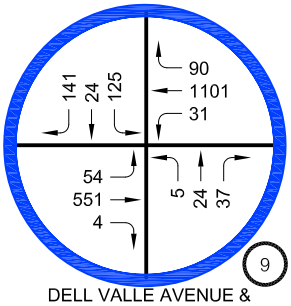
DEL VALLE AVENUE &
LOUKELTON STREET



DELL VALLE AVENUE &
MENTZ STREET



DEL VALLE AVENUE &
SIERRA VISTA COURT



DELL VALLE AVENUE &
TEMPLE AVENUE

FIGURE 14

7/2016

FUTURE TRAFFIC VOLUMES WITH PROJECT
EXISTING + AMBIENT GROWTH + CUMULATIVE + PROJECT
AM PEAK HOUR

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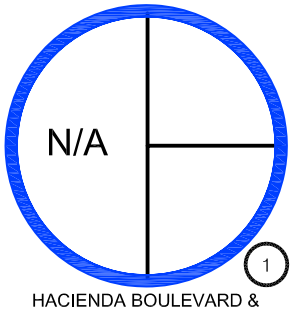
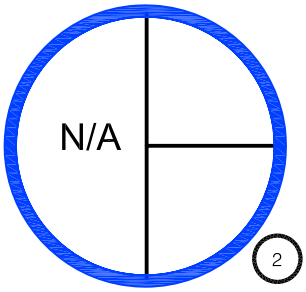
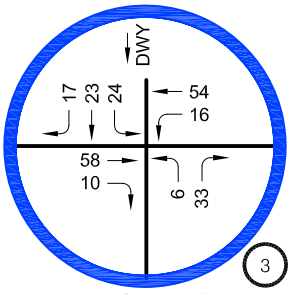
(310)766-5222, (661)799-8423 , liz@overlandtraffic.com



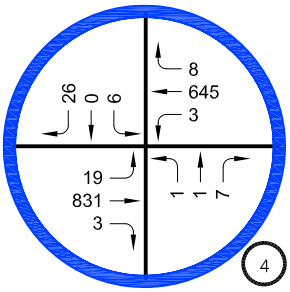
HACIENDA BOULEVARD &
LOUKELTON STREET



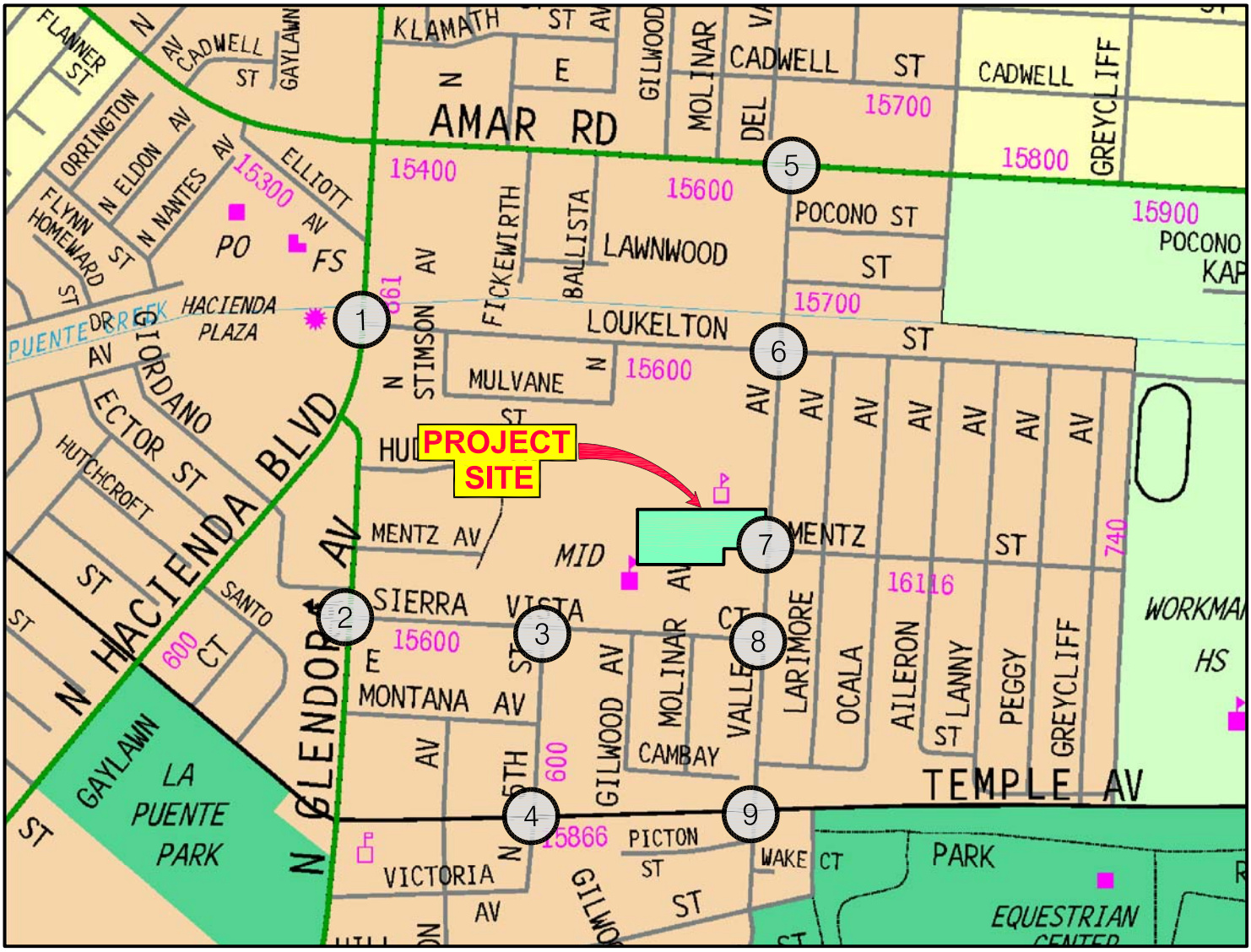
GLENDORA AVENUE &
SIERRA VISTA COURT

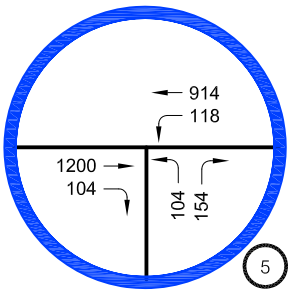


5TH STREET &
SIERRA VISTA COURT

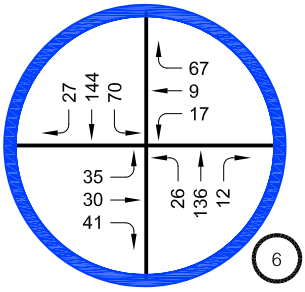


5TH STREET &
TEMPLE AVENUE

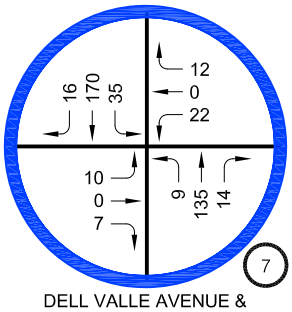




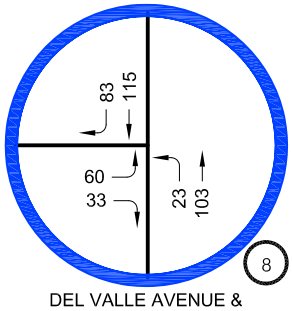
AMAR ROAD &
DEL VALLE AVENUE



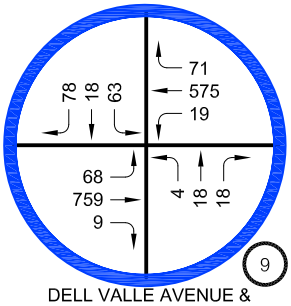
DEL VALLE AVENUE &
LOUKELTON STREET



DELL VALLE AVENUE &
MENTZ STREET



DEL VALLE AVENUE &
SIERRA VISTA COURT



DELL VALLE AVENUE &
TEMPLE AVENUE

FIGURE 15

7/2016

FUTURE TRAFFIC VOLUMES WITH PROJECT
EXISTING + AMBIENT GROWTH + CUMULATIVE + PROJECT
AFTER SCHOOL PM PEAK HOUR

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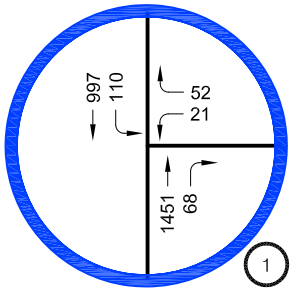
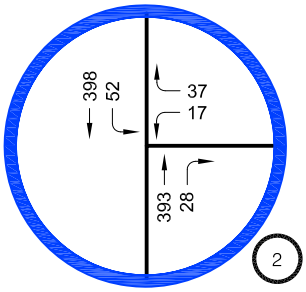
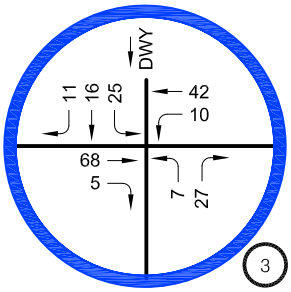
(310)766-5222, (661)799-8423 , liz@overlandtraffic.com



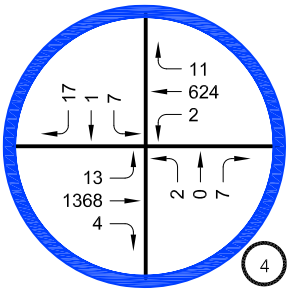
HACIENDA BOULEVARD &
LOUKELTON STREET



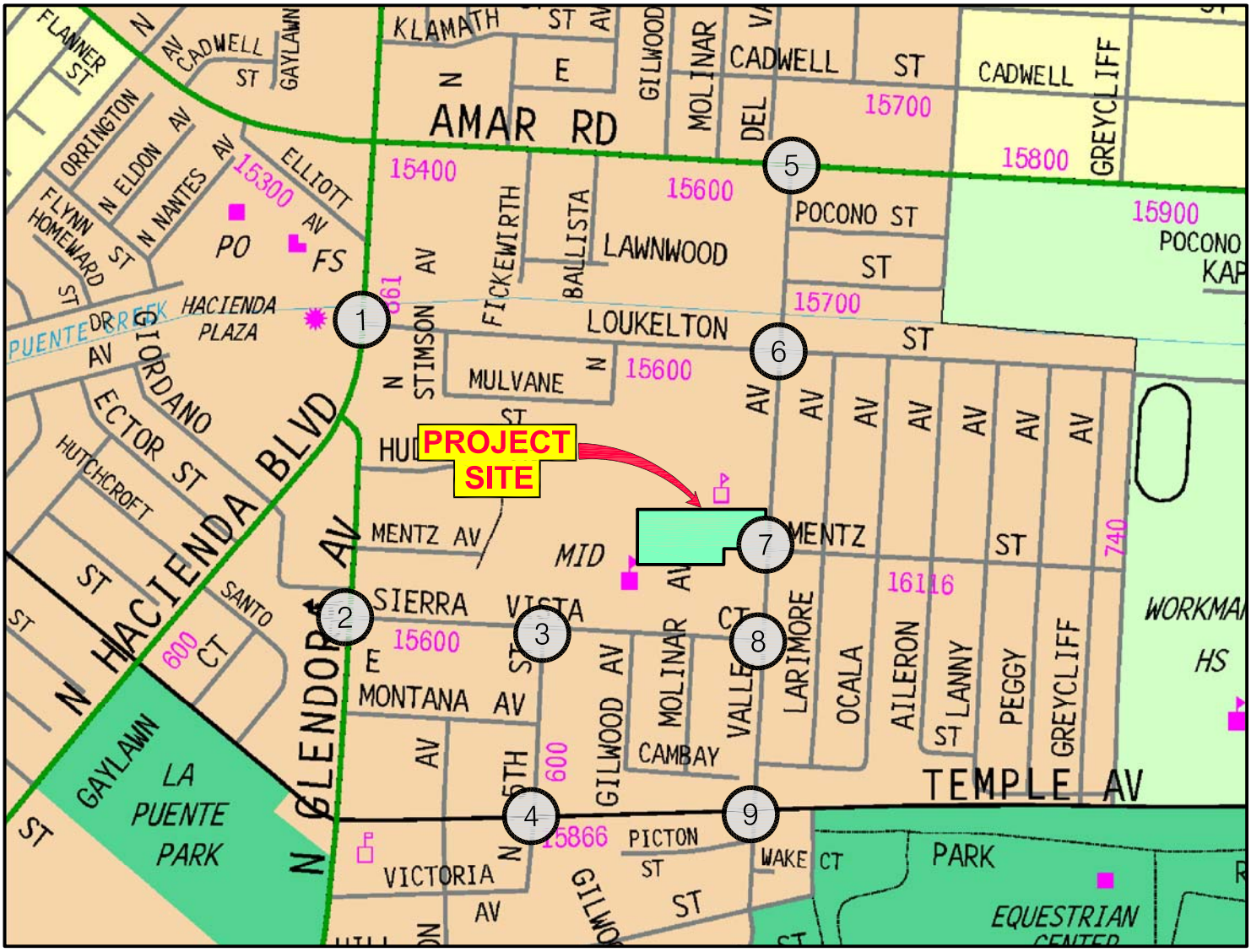
GLENDORA AVENUE &
SIERRA VISTA COURT

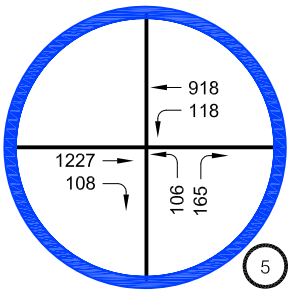


5TH STREET &
SIERRA VISTA COURT

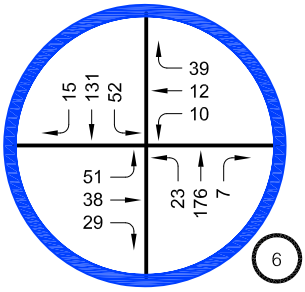


5TH STREET &
TEMPLE AVENUE

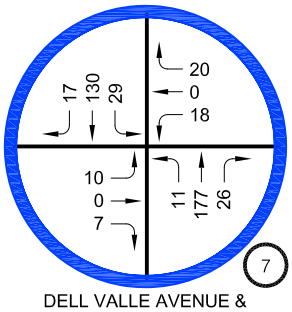




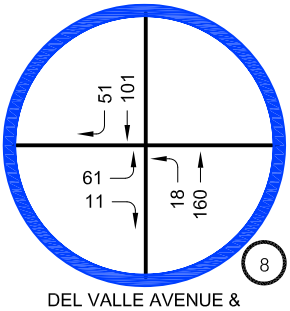
AMAR ROAD &
DEL VALLE AVENUE



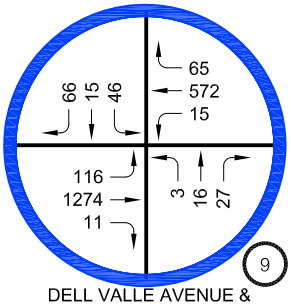
DEL VALLE AVENUE &
LOUKELTON STREET



DELL VALLE AVENUE &
MENTZ STREET



DEL VALLE AVENUE &
SIERRA VISTA COURT



DELL VALLE AVENUE &
TEMPLE AVENUE

FIGURE 16

7/2016

FUTURE TRAFFIC VOLUMES WITH PROJECT
EXISTING + AMBIENT GROWTH + CUMULATIVE + PROJECT
PM PEAK HOUR

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(310)766-5222, (661)799-8423 , liz@overlandtraffic.com

Table 11
Intersection Operating Conditions Summary
Existing + Ambient Growth + Cumulative Projects + Project
Future With Project

No.	Intersection	Peak Hour	(d) Future (2018) W/ Ambient+Cumulative ICU/Delay	LOS	(e) Future (2018) w/ Ambient+Cumulative+Project ICU/Delay	LOS	IMPACT	% Impact*	Significant Impact
1.	Hacienda Bl &	AM	186.0	F	186.5	F	+ 0.5	0.3%	NO
	Loukelton St	PM	378.1	F	378.3	F	+ 0.2	0.1%	NO
2.	Glendora Av &	AM	14.8	B	15.0	C	+ 0.2		NO
	Sierra Vista Ct	PM	12.0	B	12.4	B	+ 0.4		NO
3.	5th Street &	AM	8.0	A	8.1	A	+ 0.1		NO
	Sierra Vista Ct	School PM	7.3	A	7.4	A	+ 0.1		NO
		PM	7.3	A	7.4	A	+ 0.1		NO
4.	5th Street &	AM	51.4	F	51.7	F	+ 0.3	0.6%	NO
	Temple Av	School PM	19.1	C	19.2	C	+ 0.1		NO
		PM	34.8	D	35.0	D	+ 0.2	0.6%	NO
5.	*Amar Rd &*	*AM*	*0.742*	*D*	*0.746*	*D*	*+ 0.004*		*NO*
	Del Valle Av	*School PM*	*0.768*	*D*	*0.773*	*D*	*+ 0.005*		*NO*
		PM	*0.765*	*D*	*0.771*	*D*	*+ 0.006*		*NO*
6.	Del Valle Av &	AM	10.9	B	11.1	B	+ 0.2		NO
	Loukelton St	School PM	9.3	A	9.5	A	+ 0.2		NO
		PM	9.2	A	9.4	A	+ 0.2		NO
7.	Del Valle Av &	AM	10.2	B	10.4	B	+ 0.2		NO
	Mentz St	School PM	8.4	A	8.6	A	+ 0.2		NO
		PM	8.4	A	8.6	A	+ 0.2		NO
8.	Del Valle Av &	AM	14.7	B	14.8	B	+ 0.1		NO
	Sierra Vista Ct	School PM	10.9	B	11.1	B	+ 0.2		NO
		PM	11.2	B	11.3	B	+ 0.1		NO
9.	*Del Valle Av &*	*AM*	*0.799*	*D*	*0.802*	*D*	*+ 0.003*		*NO*
	Temple Av	*School PM*	*0.562*	*B*	*0.565*	*B*	*+ 0.003*		*NO*
		PM	*0.707*	*C*	*0.710*	*C*	*+ 0.003*		*NO*

Intersections 5 & 9 are signalized locations (ICU)

Intersections 1, 2, 4 & 8 are stopped at the minor street only (Delay)

Intersections 3, 6, & 7 are all way stopped intersections (Delay)

DIR = Direction of highest delay

* % Impact presented when Delay at minor street stopped intersections is at LOS E or F

School Traffic Impact Evaluation

The City of La Puente Circulation and Infrastructure Element of the General Plan indicates that most of the schools in the City were designed anticipating that most students would walk to and from school. However, it if further noted that trends indicate that many caretakers currently prefer picking up and dropping of children to/from school in a vehicle. It is cited that this creates some traffic congestion on some of the local streets that were not designed to handle large peak hour loading queues.

Traffic conditions during drop-off and pick up were observed in early December 2015 when Del Valle Elementary School, Sierra Vista Middle School and William Workman High School had typical school days and hours of operation. The area around Del Valle Elementary School was concentrated on since it neighbors the Project site. It was noted that there were many students being walked to school by caretakers or by themselves for the teens headed to the high school. However, many were also being dropped off. Short queues of two to four vehicles were observed for short periods of time entering and exiting the school driveway. Many caretakers parked their cars on Del Valle Avenue and then walked in with or dropped off students. Some drivers parked their vehicles on the east side of Del Valle Avenue and were observed crossing mid-block from their vehicles to the school. Two instances of temporary double parking were also observed close to the school bell ringing time.

The traffic congestion created by the schools lasted approximately 20 minutes in the immediate area. The proposed Project AM Peak traffic coincides with the School AM Peak Hour. The Project is estimated to generate a net of 26 vehicles during the AM Peak Hour with 9 in and 17 outbound. This could equate to approximately 8 or 9 vehicles interacting with this school arrival traffic. The PM Peak of the school occurs prior to the PM Peak of the Project and is not anticipated to contribute substantially to after school traffic conditions. However, a conservative analysis was conducted which added the PM Project traffic volumes to the after school and PM Peak Hour evaluation. The intersection of Del Valle Avenue and Mentz Street was evaluated as part of the traffic study and a significant traffic impact, as defined by the City, has not been identified.

It was noted in the Del Valle Elementary School Parent/Student Handbook 2015-2016 that students are encouraged to cross the street the pedestrian crosswalks and that all traffic and pedestrian laws be obeyed. Students who ride bikes are reminded in the handbook that they must wear their helmets and to follow bicycle rules.

Based on observations of the schools a few suggestions are recommended for consideration to alleviate some of the existing school congestion and increase traffic safety at the schools:

1. Remind parents periodically in newsletters that double parking is both a vehicle infraction (California Vehicle Code section 22500-22526 (h)) and a safety issue. It is a concern for the child exiting the vehicle with minimal visibility, creates a need for a vehicle behind the stopped vehicle to enter the opposite direction of travel to pass and creates visibility issues.
2. Provide a periodic reminder to parents that it is safer to cross the street at a marked crosswalk. There are marked crosswalks on north leg of Del Valle Avenue at Mentz Street and on all four legs of the intersection at Loukelton Street and Del Valle Avenue.
3. Consider a high visibility marked crosswalk on Del Valle Avenue at the main driveway for those who park on the east side of Del Valle Avenue and cross to the school and encourage students and caretakers to use the crosswalk. This would be a mid-block crosswalk and may need a crossing guard. Further analysis is required to see if the mid-block uncontrolled crosswalk is warranted and a crossing guard is warranted
4. Provided staggered start time for school to spread out the arrival and departure times of the vehicles dropping off students similar to the current staggered departure times frames.
5. Consider a color coded vehicle sticker that indicates a designated time period for drop-off and pick-up of students to further enforce time periods for vehicles to be arriving and departing from the schools. A potential time issue for parents with students if different grade levels/time periods can be resolved by having the earliest family's members' student the arrival time for the family/carpool.

6. The school hours for the Elementary, Middle and High School currently vary (7:50 am for the middle school, 8 am for the elementary school and 8:06 am for first period (a 0 period is provided at 6:56 am) for the high school. A greater time period between the school start times would reduce the traffic overlap between the schools.

Bicycle Plan Improvements

The City of La Puente Circulation and Infrastructure Element of the General Plan identifies cycling as a viable option for residents to commute to work or school if safe routes are available. In order to promote cycling as a mode of transportation, the City has adopted a Master Plan of Bikeways. It is comprised of Class III bicycle routes where the cycles share the road with vehicles. These routes are signed by not striped as a separate travel lane. The City of La Puente has a draft recommended bikeway network and a map is provided in Appendix G.

In the Project area, the map bikeway network map identifies Temple Avenue as an Inter-City Bikeway.

The Project will be providing individual garages for each of the residential units allowing for long term bicycle storage and easy access for their bicycles.

Transit Analysis

The proposed Project is forecast to generate a net gain of approximately 381 weekday daily trips with 26 trips during the AM Peak Hour and 39 trips during the PM Peak Hour. As per Congestion Management Program (CMP) 2008 guidelines, person trips can be estimated by multiplying the total trips generated by 1.4. The trips assigned to transit may be calculated by multiplying the person trips generated by 3.5%. The CMP Transit trip generation calculation is displayed below in Table 12.

Table 12
Transit Trips

	DAILY	AM PEAK HOUR	PM PEAK HOUR
PROJECT TRIPS (from Table 2)	381	26	39
PERSON TRIPS (trips X 1.4)	533	36	55
TRANSIT TRIPS (person trips X 3.5%)	**19**	**1**	**2**

This level of transit increase is not expected to adversely affect the current ridership of the transit services in the area.

Construction Analysis

The Project developer will attempt to park and stage for construction on-site as much as possible. In the event that off-site street surfaces are needed, the developer will submit for review and approval a traffic control plan detailing days, time of day, and safety features. Any off-site construction needs will attempt to be minimized and be conducted outside of peak traffic times.

Impacts on Regional Transportation System

The Congestion Management Program (CMP) was adopted to monitor regional traffic growth and related transportation improvements. The CMP designated a transportation network including all state highways and some arterials within the County of Los Angeles to be monitored by of local jurisdictions. If LOS standards deteriorate on the CMP network, then local jurisdictions must prepare a deficiency plan to be in conformance with the program. Local jurisdictions found to be in nonconformance with the CMP risk the loss of state gas tax funding.

For purposes of the CMP LOS analysis, an increase in the freeway volume by 150 vehicles per hour during the am or pm peak hours in any direction requires further analysis. A substantial change in freeway segments is defined as an increase or decrease of 2% in the demand to capacity ratio when at LOS F. For purposes of CMP intersections, an increase of 50 vehicles or more during the am or pm peak requires further analysis.

The intersections of Azusa Avenue and Main Street has been identified as a CMP monitoring locations in the City of La Puente. Freeway locations are included along the SR-60 east of the I-605 Freeway and the I-605 Freeway north of the SR-60. The Project volumes on the area freeways are anticipated to be dispersed throughout the roadway and freeway system. It is anticipated that less 10% of Project trips will go through the CMP intersection or freeway segments during the peak periods. This would equate to a maximum of 3 trips during the AM Peak Hour and 4 trips during the PM Peak Hour. This is below the CMP significance threshold needed for further evaluation.

CHAPTER 6 MITIGATION MEASURES & CONCLUSIONS

This study has determined that based on the analysis of a proposed 45-unit condominium project at 747 Del Valle Avenue that the added traffic volume generated by the Project will not significantly impact the traffic flow at any of the nine study intersections.

Parking – The Project will meet City Municipal Code required parking spaces with 90 residential parking spaces in garages and 23 open air guest parking spaces. This will allow for both resident and guest parking on site. No parking impacts are anticipated.

No transit, construction, Congestion Management Program, bikeways or freeway significant impacts are anticipated with the Project.

No traffic mitigation is required because the Project's added traffic volume will not significantly impact any of the study intersections.

APPENDIX A

COMMUNITY PLAN LAND USE INFORMATION

Zoning Map

December 2014

LEGEND

- RE Residential Estate
- R1 Low Density Residential
- R2 Medium Density Residential
- R3 Medium-High Density Residential
- R4 High Density Residential
- DBD Downtown Business District
- C1 Neighborhood Commercial
- C2 General Commercial
- CM Commercial-Manufacturing
- PI Public Facility
- OS Open Space
- Glendora Specific Plan
- Cottrell Ranch Specific Plan
- Sunny Gardens Specific Plan
- Unruh Avenue Specific Plan
- City Boundary
- Sphere of Influence Boundary
- Planning Area Boundary
- Downtown Business District
- Freeway
- Railroad
- Water Feature

Note:
These maps are based on proposed changes to land uses. These changes have not been officially adopted. Please refer to the offical Zoning map for current land use information.

Date last revised: October 21, 2014

MIG

APPENDIX B

AERIAL STREET VIEWS OF STUDY INTERSECTIONS

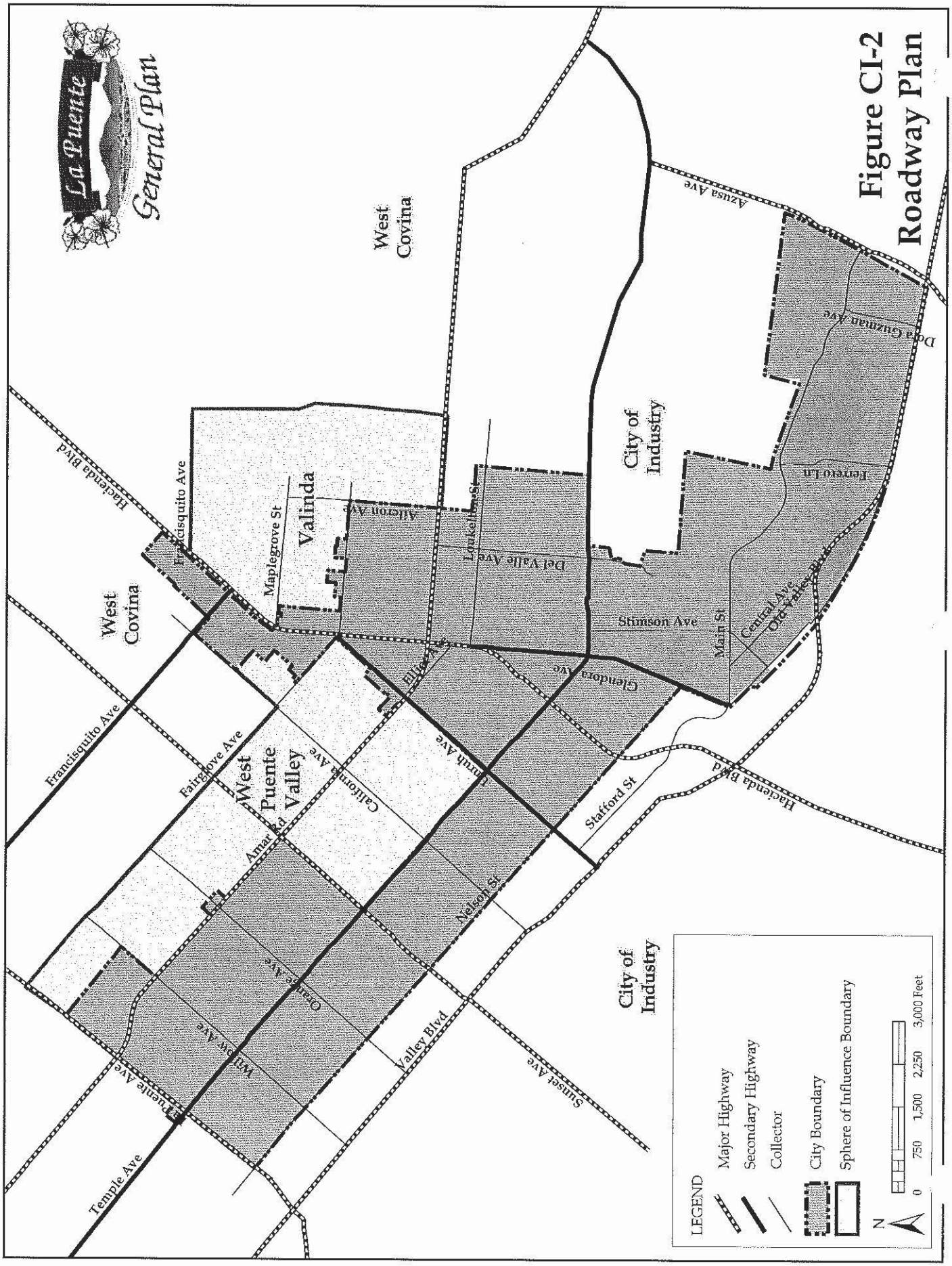
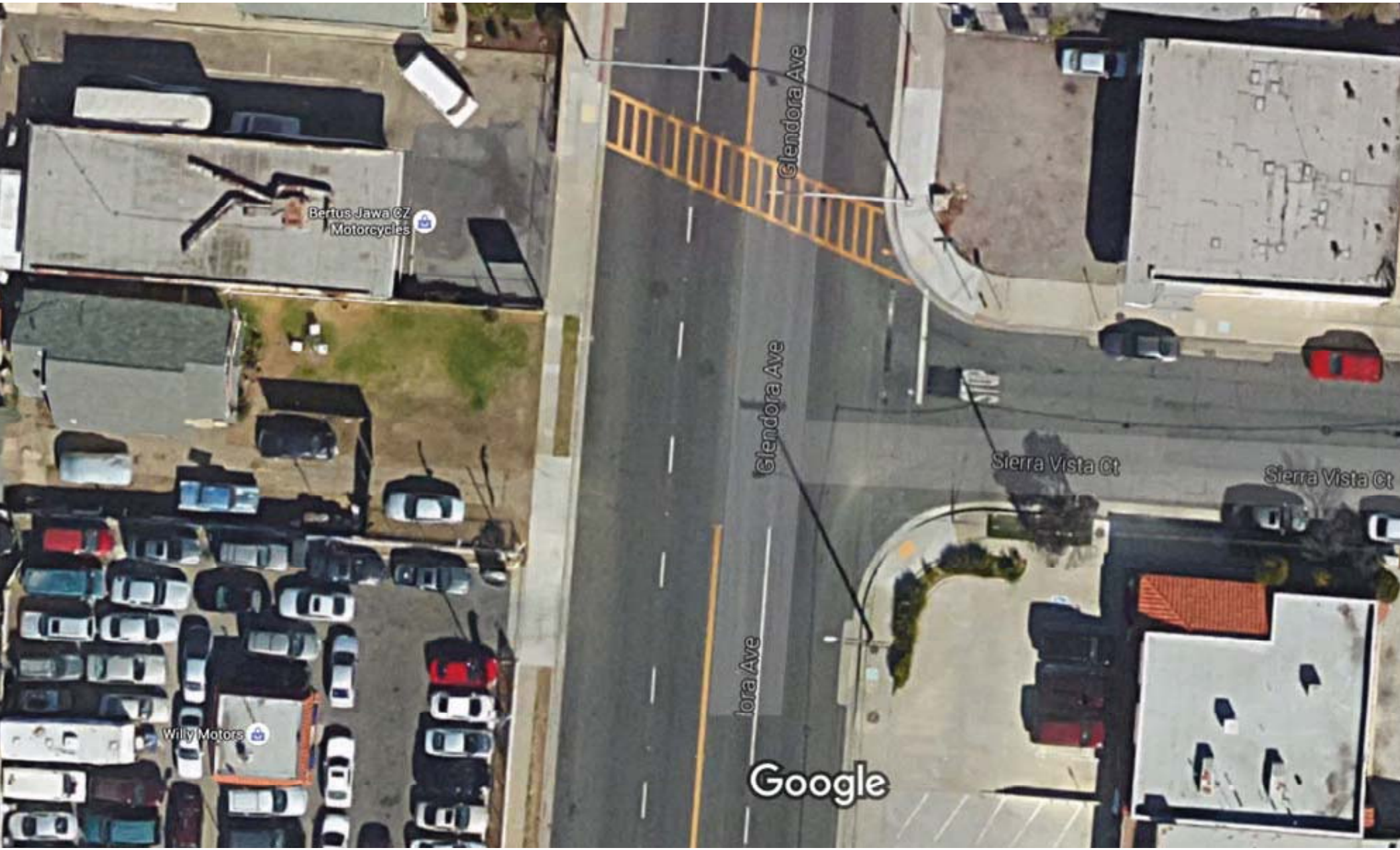


Figure CI-2
Roadway Plan

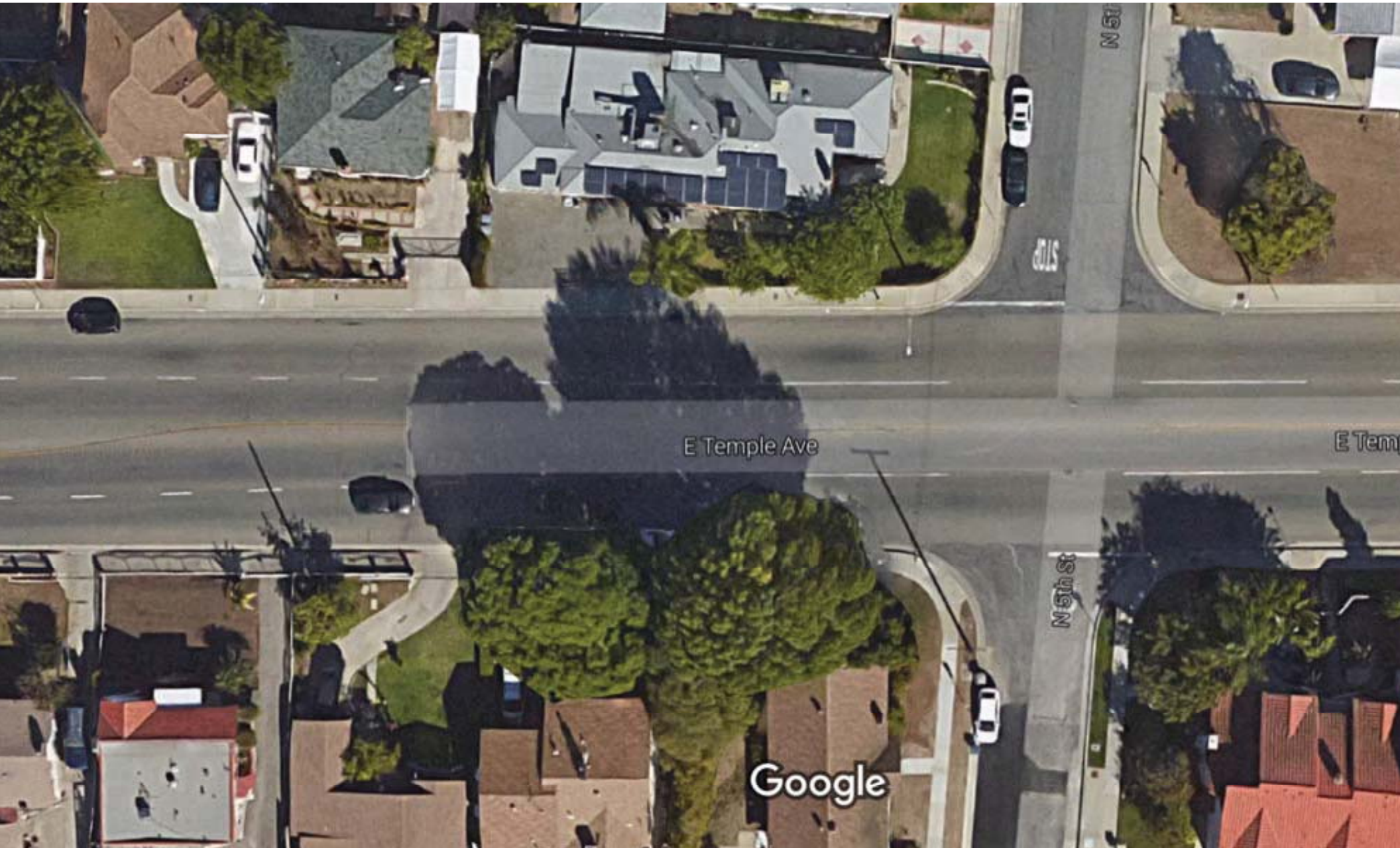
HACIENGA BOULEVARD & LOUKELTON STREET

GLENDORA AVENUE & SIERRA VISTA COURT



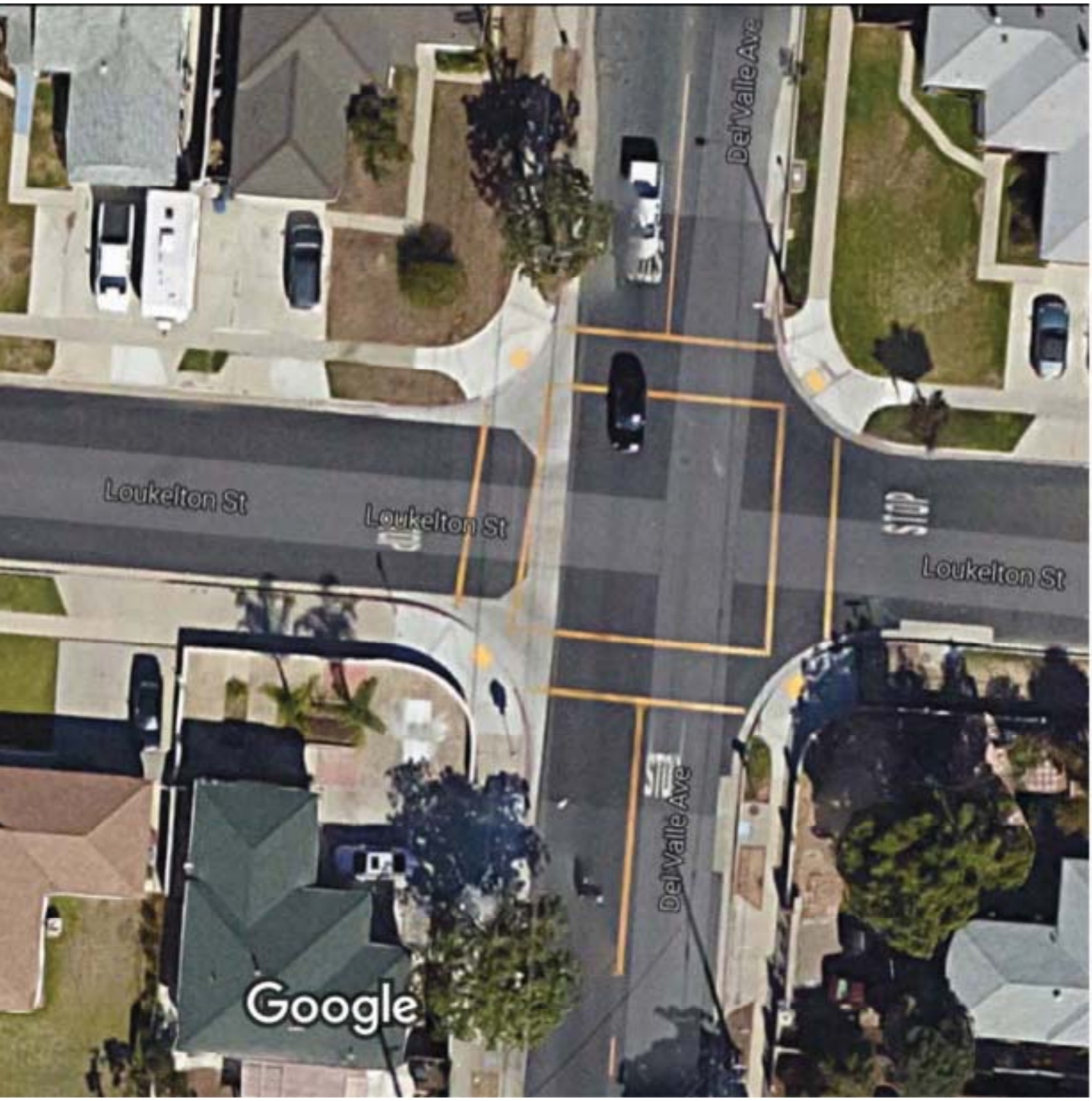
5TH STREET & SIERRA VISTA COURT

5TH STREET & TEMPLE AVENUE

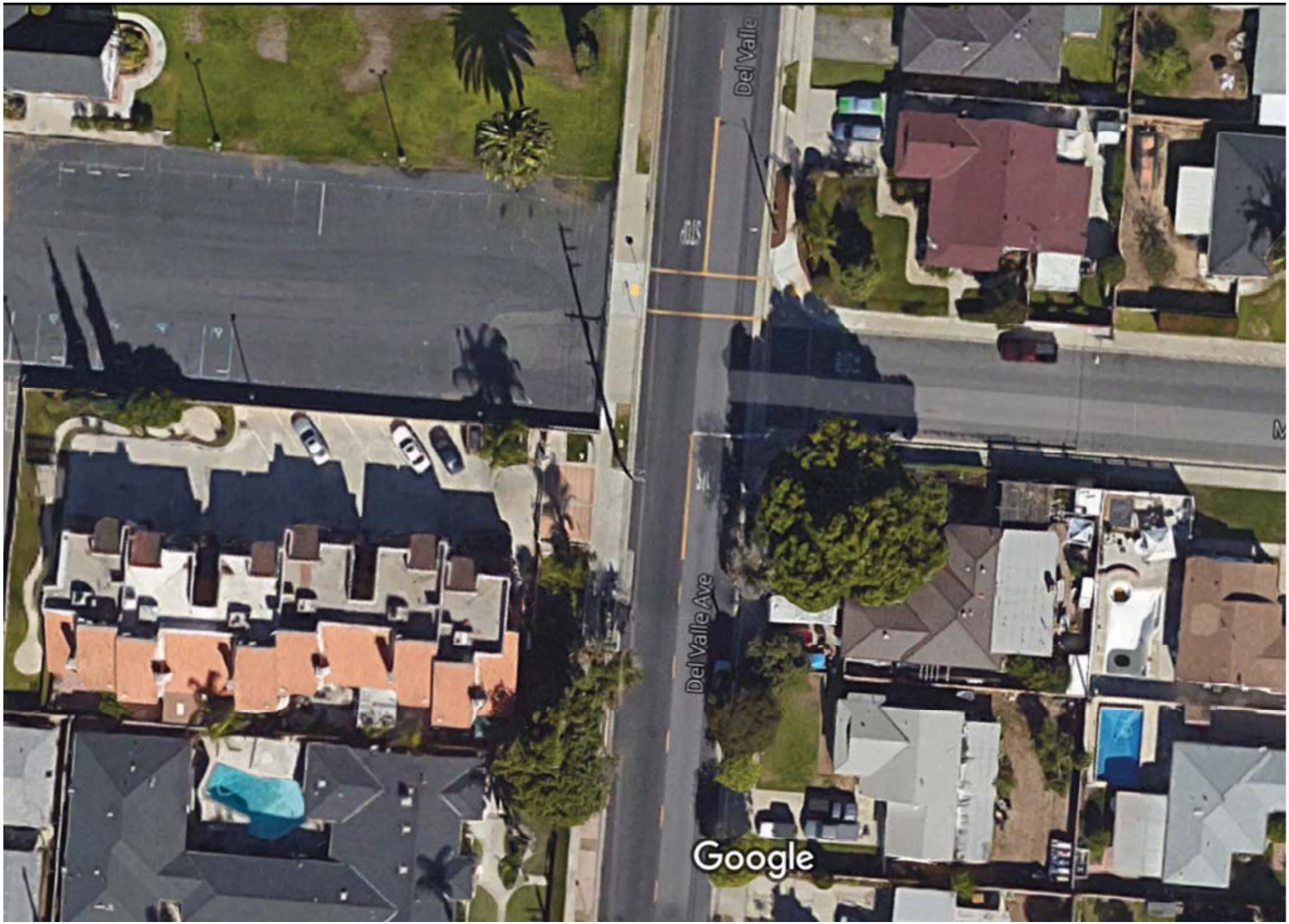


AMAR ROAD & DEL VALLE STREET

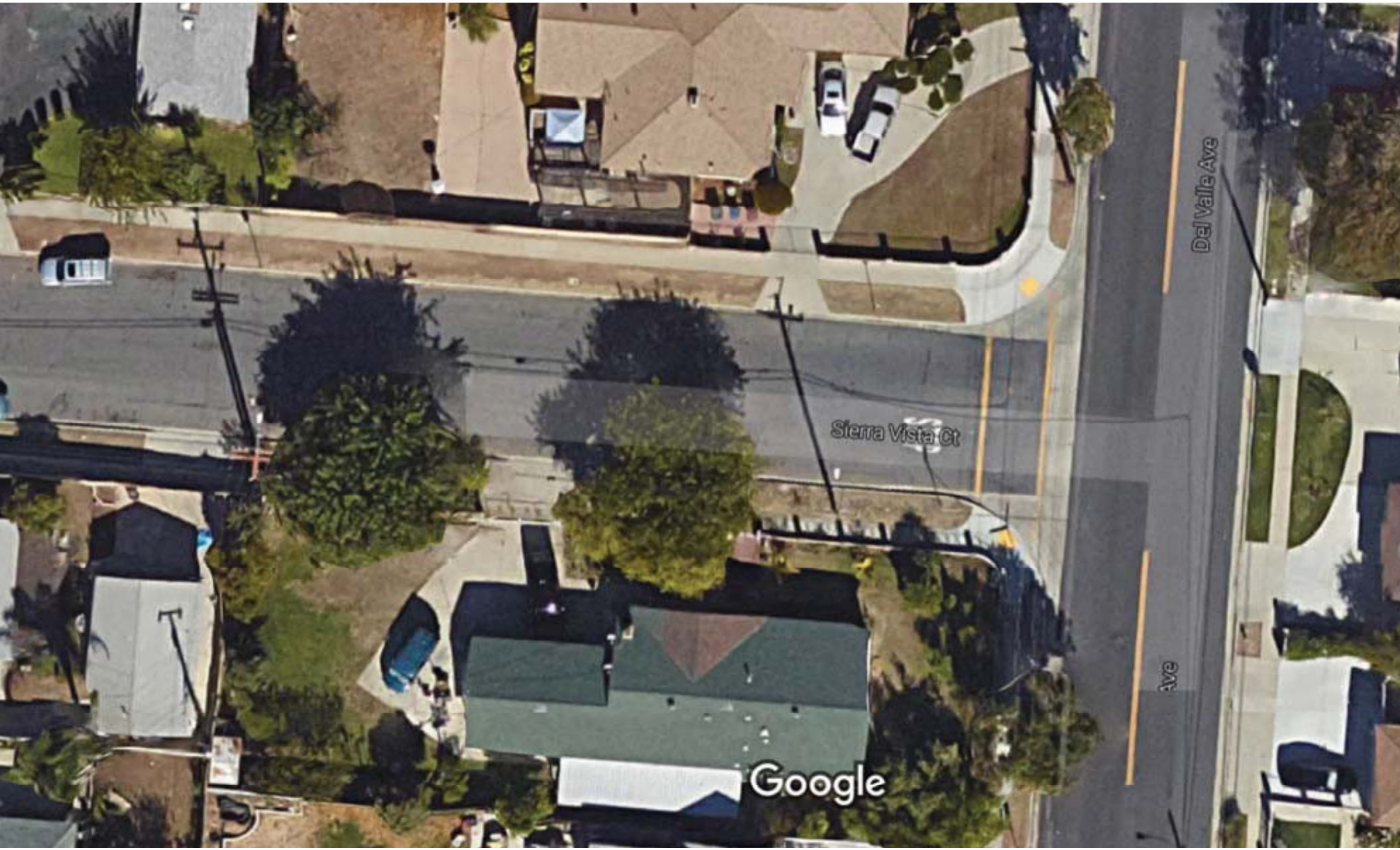
DEL VALLE AVENUE & LOUKELTON STREET



Del Valle Ave & Mentz St



DEL VALLE AVENUE & SIERRA VISTA COURT

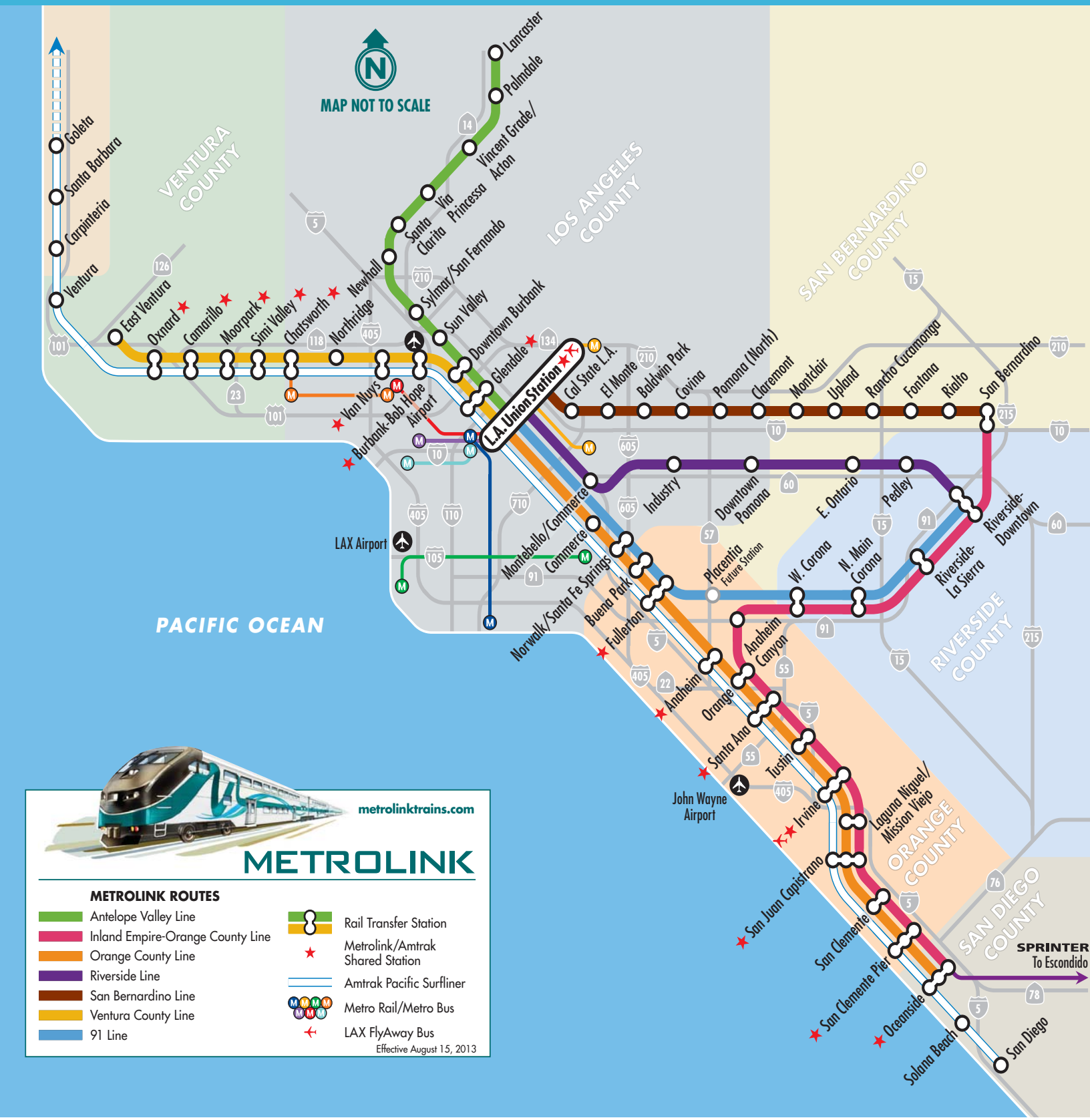


E Temple Ave & Del Valle Ave

APPENDIX C

TRANSIT ROUTES

METROLINK SYSTEM MAP



Your LINK to La Puente

Green Line - Weekday Schedule

Hacienda @ Francisquito E.	Amar @ Del Valle	Senior Center	Inyo @ Dora Guzman	Central @ Main	Temple @ Hacienda	Willow School	Amar @ Willow	Amar @ Hacienda
6:00 am	6:06 am	6:12 am	6:20 am	6:28 am	6:34 am	6:42 am	6:47 am	6:52 am
7:00	7:06	7:12	7:20	7:28	7:34	7:42	7:47	7:52
8:00	8:06	8:12	8:20	8:28	8:34	8:42	8:47	8:52
9:00	9:06	9:12	9:20	9:28	9:34	9:42	9:47	9:52
10:00	10:06	10:12	10:20	10:28	10:34	10:42	10:47	10:52
11:00	11:06	11:12	11:20	11:28	11:34	11:42	11:47	11:52
12:00 pm	12:06 pm	12:12 pm	12:20 pm	12:28 pm	12:34 pm	12:42 pm	12:47 pm	12:52 pm
1:00	1:06	1:12	1:20	1:28	1:34	1:42	1:47	1:52
2:00	2:06	2:12	2:20	2:28	2:34	2:42	2:47	2:52
3:00	3:06	3:12	3:20	3:28	3:34	3:42	3:47	3:52
4:00	4:06	4:12	4:20	4:28	4:34	4:42	4:47	4:52
5:00	5:06	5:12	5:20	5:28	5:34	5:42	5:47	5:52
6:00 pm	6:06 pm	6:12 pm	6:20 pm	6:28 pm	6:34 pm	6:42 pm	6:47 pm	6:52 pm

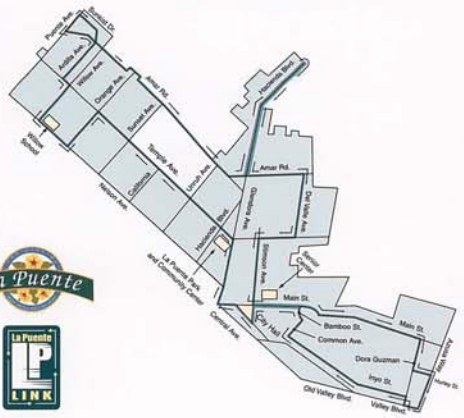
Green Line - Weekend Schedule

Hacienda @ Francisquito E.	Amar @ Del Valle	Senior Center	Inyo @ Dora Guzman	Central @ Main	Temple @ Hacienda	Willow School	Amar @ Willow	Amar @ Hacienda
9:00 am	9:06 am	9:12 am	9:20 am	9:28 am	9:34 am	9:42 am	9:47 am	9:52 am
10:00	10:06	10:12	10:20	10:28	10:34	10:42	10:47	10:52
11:00	11:06	11:12	11:20	11:28	11:34	11:42	11:47	11:52
12:00 pm	12:06 pm	12:12 pm	12:20 pm	12:28 pm	12:34 pm	12:42 pm	12:47 pm	12:52 pm
1:00	1:06	1:12	1:20	1:28	1:34	1:42	1:47	1:52
2:00	2:06	2:12	2:20	2:28	2:34	2:42	2:47	2:52
3:00	3:06	3:12	3:20	3:28	3:34	3:42	3:47	3:52
4:00	4:06	4:12	4:20	4:28	4:34	4:42	4:47	4:52
5:00*	5:06*	5:12*	5:20*	5:28*	5:34*	5:42*	5:47*	5:52*

*Saturday Only

For more information call:
626-330-4000

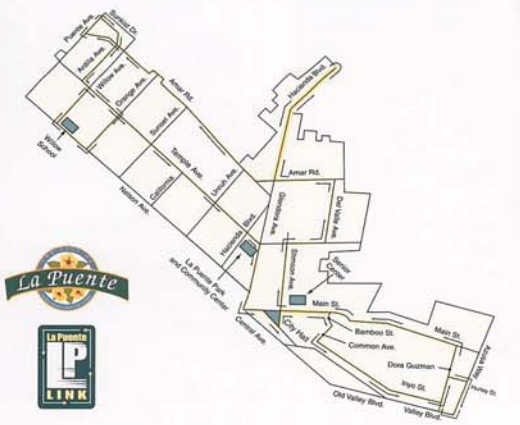
Green Line Scheduled Stops (Clockwise)



LOCATION	CORNER	LOCATION	CORNER
PLAZA DE HACIENDA		SENIOR CENTER	
HACIENDA & FRANCISQUITO	S/W	CIVIC CENTER	
HACIENDA & MAPLEGROVE	S/W	GLENDORA & MAIN	N/E
AMAR & HACIENDA	S/E	GLENDORA & ROWLAND	N/E
AMAR & DEL VALLE	S/W	GLENDORA & HILL	N/E
DEL VALLE & LOUKELTON	N/W	TEMPLE & HACIENDA	N/E
DEL VALLE & SIERRA VISTA	N/W	TEMPLE & PERTH	N/E
STIMSON & VICTORIA	N/W	TEMPLE & DUFF	N/W
STIMSON & ROWLAND	N/W	TEMPLE & EVANWOOD	N/W
MAIN & ALBERT	S/E	TEMPLE & LEAGUE	N/W
MAIN & BAMBOO	S/W	ORANGE & BECKNER	N/W
MAIN & HILLCREST	S/E	NELSON & ORANGE	N/W
MAIN & FERRERO	S/W	WILLOW SCHOOL	
MAIN & CHATTERTON	S/W	WILLOW & BECKNER	S/E
MAIN & DORA GUZMAN	S/W	ARDILLA & TEMPLE	N/E
DORA GUZMAN & HURLEY	N/W	AMAR & ARDILLA	N/W
HURLEY & AZUSA	S/W	AMAR & PUENTE	N/E
AZUSA & VALLEY	N/W	SUNNY GARDEN APTS.	
INYO & DORA GUZMAN	N/W	AMAR & WILLOW	S/W
INYO & WICKFORD	N/E	AMAR & ORANGE	S/E
INYO & FERRERO	N/E	AMAR & SUNSET	S/E
INYO & WARINGWOOD	N/W	AMAR & UNRUH	S/W
INYO & BLUEBONNET	N/W	HACIENDA & AMAR	N/E
INYO & COMMON	N/E	HACIENDA & FAIRGROVE	S/E
MAIN & BAMBOO	N/W	HACIENDA & MAPLEGROVE	N/E

Your LINK to La Puente

Yellow Line Scheduled Stops (Counterlockwise)



LOCATION	CORNER	LOCATION	CORNER
PLAZA DE HACIENDA		MAIN & ALBERT	S/E
HACIENDA & FRANCISQUITO	S/W	MAIN & BAMBOO	S/W
HACIENDA & MAPLEGROVE	S/W	INYO & COMMON	S/E
HACIENDA & UNRUH	S/W	INYO & BLUEBONNET	S/W
HACIENDA & AMAR	N/W	INYO & WARINGWOOD	S/W
AMAR & UNRUH	N/W	INYO & FERRERO	S/E
AMAR & SUNSET	N/E	INYO & WICKFORD	S/W
AMAR & ORANGE	N/W	INYO & DORA GUZMAN	S/W
AMAR & WILLOW	N/E	DORA GUZMAN & HURLEY	N/E
AMAR & ARDILLA	N/W	HURLEY & AZUSA	S/W
AMAR & PUENTE	N/E	AZUSA & VALLEY	N/W
SUNNY GARDEN APTS.		MAIN & DORA GUZMAN	N/W
ARDILLA & TEMPLE	N/W	MAIN & CHATTERTON	N/W
ORANGE & BECKNER	N/W	MAIN & BANBRIDGE	N/W
NELSON &ORANGE	N/W	MAIN & HILLCREST	N/E
WILLOW SCHOOL		MAIN & BAMBOO	N/W
WILLOW & BECKNER	S/E	SENIOR CENTER	
TEMPLE & LEAGUE	S/E	STIMSON & ROWLAND	S/E
TEMPLE & BROADMOOR	S/E	STIMSON & VICTORIA	N/E
TEMPLE & DUFF	S/W	DEL VALLE & SIERRA VISTA	N/E
TEMPLE & PERTH	S/W	DEL VALLE & LOUKELTON	N/E
TEMPLE & HACIENDA	S/E	AMAR & DEL VALLE	N/E
COMMUNITY CENTER		HACIENDA & AMAR	N/E
GLENDORA & ROWLAND	N/W	HACIENDA & FAIRGROVE	S/E
CENTRAL & MAIN	S/W	HACIENDA & MAPLEGROVE	N/E

Yellow Line - Weekday Schedule

Hacienda @ Francisquito E.	Amar @ Hacienda	Amar @ Willow	Willow School	Temple @ Hacienda	Central @ Main	Inyo @ Dora Guzman	Senior Center	Amar @ Del Valle
6:00 am	6:06 am	6:11 am	6:18 am	6:26 am	6:32 am	6:40 am	6:48 am	6:54 am
7:00	7:06	7:11	7:18	7:26	7:32	7:40	7:48	7:54
8:00	8:06	8:11	8:18	8:26	8:32	8:40	8:48	8:54
9:00	9:06	9:11	9:18	9:26	9:32	9:40	9:48	9:54
10:00	10:06	10:11	10:18	10:26	10:32	10:40	10:48	10:54
11:00	11:06	11:11	11:18	11:26	11:32	11:40	11:48	11:54
12:00 pm	12:06 pm	12:11 pm	12:18 pm	12:26 pm	12:32 pm	12:40 pm	12:48 pm	12:54 pm
1:00	1:06	1:11	1:18	1:26	1:32	1:40	1:48	1:54
2:00	2:06	2:11	2:18	2:26	2:32	2:40	2:48	2:54
3:00	3:06	3:11	3:18	3:26	3:32	3:40	3:48	3:54
4:00	4:06	4:11	4:18	4:26	4:32	4:40	4:48	4:54
5:00	5:06	5:11	5:18	5:26	5:32	5:40	5:48	5:54
6:00 pm	6:06 pm	6:11 pm	6:18 pm	6:26 pm	6:32 pm	6:40 pm	6:48 pm	6:54 pm

Yellow Line - Weekend Schedule

Hacienda @ Francisquito E.	Amar @ Hacienda	Amar @ Willow	Willow School	Temple @ Hacienda	Central @ Main	Inyo @ Dora Guzman	Senior Center	Amar @ Del Valle
9:00 am	9:06 am	9:11 am	9:18 am	9:26 am	9:32 am	9:40 am	9:48 am	9:54 am
10:00	10:06	10:11	10:18	10:26	10:32	10:40	10:48	10:54
11:00	11:06	11:11	11:18	11:26	11:32	11:40	11:48	11:54
12:00 pm	12:06 pm	12:11 pm	12:18 pm	12:26 pm	12:32 pm	12:40 pm	12:48 pm	12:54 pm
1:00	1:06	1:11	1:18	1:26	1:32	1:40	1:48	1:54
2:00	2:06	2:11	2:18	2:26	2:32	2:40	2:48	2:54
3:00	3:06	3:11	3:18	3:26	3:32	3:40	3:48	3:54
4:00	4:06	4:11	4:18	4:26	4:32	4:40	4:48	4:54
5:00*	5:06*	5:11*	5:18*	5:26*	5:32*	5:40*	5:48*	5:54*

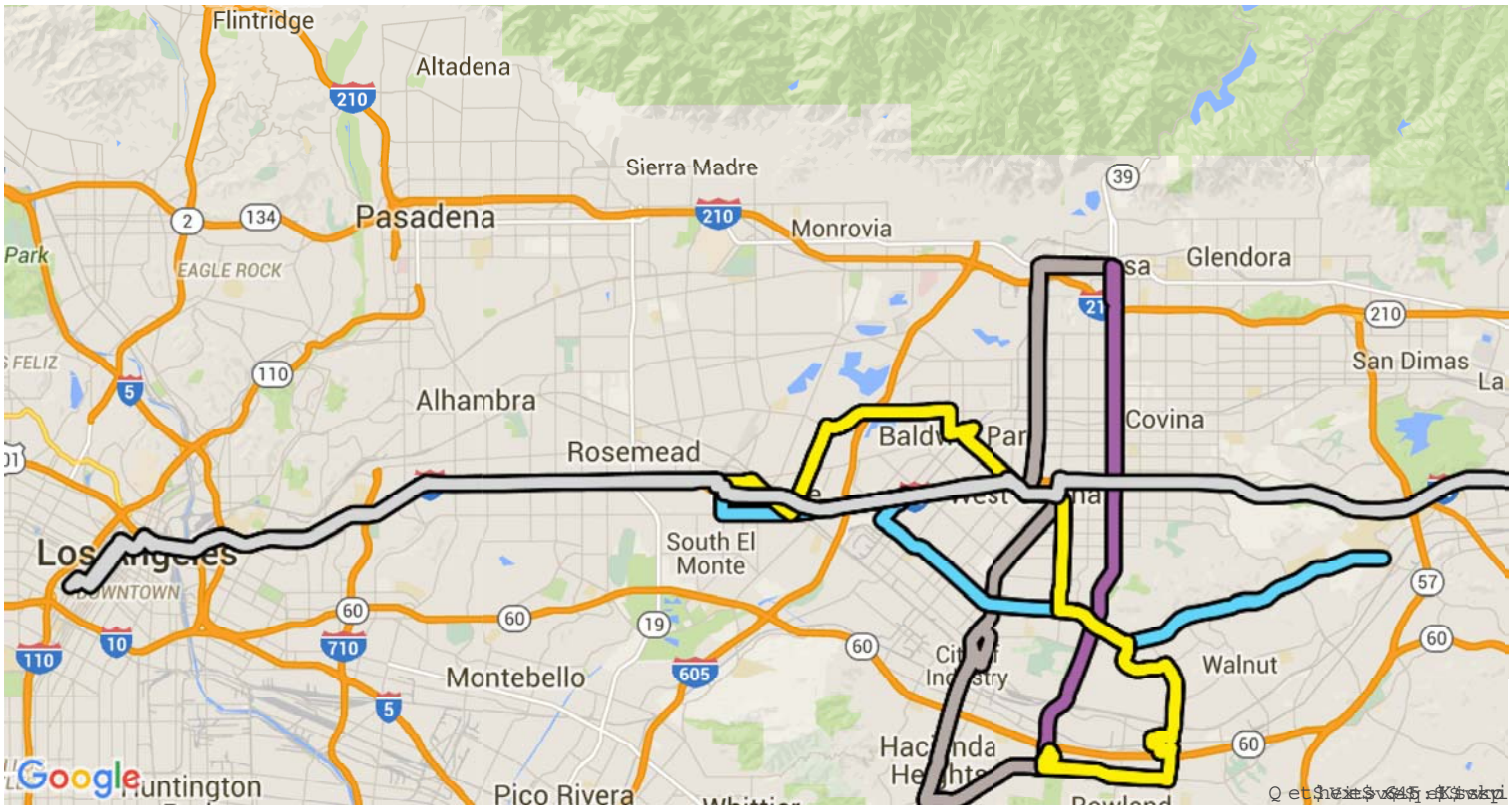
*SATURDAY ONLY

Visit us on the Web:
www.lapuente.org

Foothill Transit

Service Area Map

Foothill Transit operates 36 bus lines in 22 cities, covering an area that stretches from Downtown Los Angeles to southwest San Bernardino County. Click the checkboxes below to show each of our lines on the map. You can also download a PDF version of the service map.



Lines:

Click the checkboxes below to show each of our lines on the map. You can also download a PDF version of the service map.

- ☑ Silver Streak
- ☐ 187: Montclair - Claremont - Glendora - Pasadena
- ☑ 178: Puente Hills Mall - El Monte Station
- ☑ 185: Azusa - West Covina - Hacienda Hts. via Irwindale
- ☐ 195: Pomona - via Reservoir
- ☐ 197: Pomona - Claremont
- ☐ 269: El Monte Station - Montebello Town Center
- ☐ 272: Duarte - Baldwin Park - West Covina
- ☐ 274: Baldwin Park - La Puente - Whittier
- ☑ 280: Azusa - Puente Hills Mall via Azusa Ave

- ☐ 281: Glendora - West Covina - Puente Hills Mall
- ☐ 282: El Monte Station - Hacienda Heights - Puente Hills Mall

- ☐ 284: West Covina - Covina - San Dimas - Glendora
- ☐ 285: Puente Hills Mall - Whittier Hospital - La Habra
- ☐ 286: Pomona - Diamond Bar - Brea Mall
- ☐ 289: Puente Hills Mall - Walnut - Pomona
- ☐ 291: La Verne - Pomona - South Pomona via Garey
- ☐ 292: Claremont - Pomona
- ☐ 480: Montclair - Pomona - West Covina via Mission Blvd
- ☐ 481: El Monte - Downtown Los Angeles Express Service
- ☐ 482: Pomona - Rowland Heights - Puente Hills Mall
- ☑ 486: Pomona - La Puente - El Monte Via Amar Rd
- ☐ 488: Glendora - West Covina - El Monte
- ☐ 492: Montclair - Arcadia - El Monte via Arrow Hwy

- ☐ 493: Diamond Bar - Rowland Heights - Express Service to Downtown Los Angeles
- ☐ 494: San Dimas - Glendora - Monrovia - El Monte via Foothill Blvd.
- ☐ 495: Industry - Express Service to Downtown Los Angeles
- ☐ 496: Azusa - West Covina - Express Service to Downtown Los Angeles
- ☐ 497: Chino Park & Ride - Industry Park & Ride - Downtown Los Angeles
- ☐ 498: Azusa - West Covina - Express Service to Downtown Los Angeles
- ☐ 499: San Dimas Park & Ride - Via Verde Park & Ride - Los Angeles Express Service
- ☐ 690 Montclair – Pasadena via 210 Freeway Corridor
- ☐ 699: Montclair - Fairplex Park & Ride - Cal State LA - USC Medical Ctr - Downtown Los Angeles Express Service
- ☐ 851: Covina - Glendora via Glendora Ave
- ☐ 853: Diamond Bar
- ☐ 854: Diamond Bar

- ☐ 855: Pomona TransCenter - Claremont

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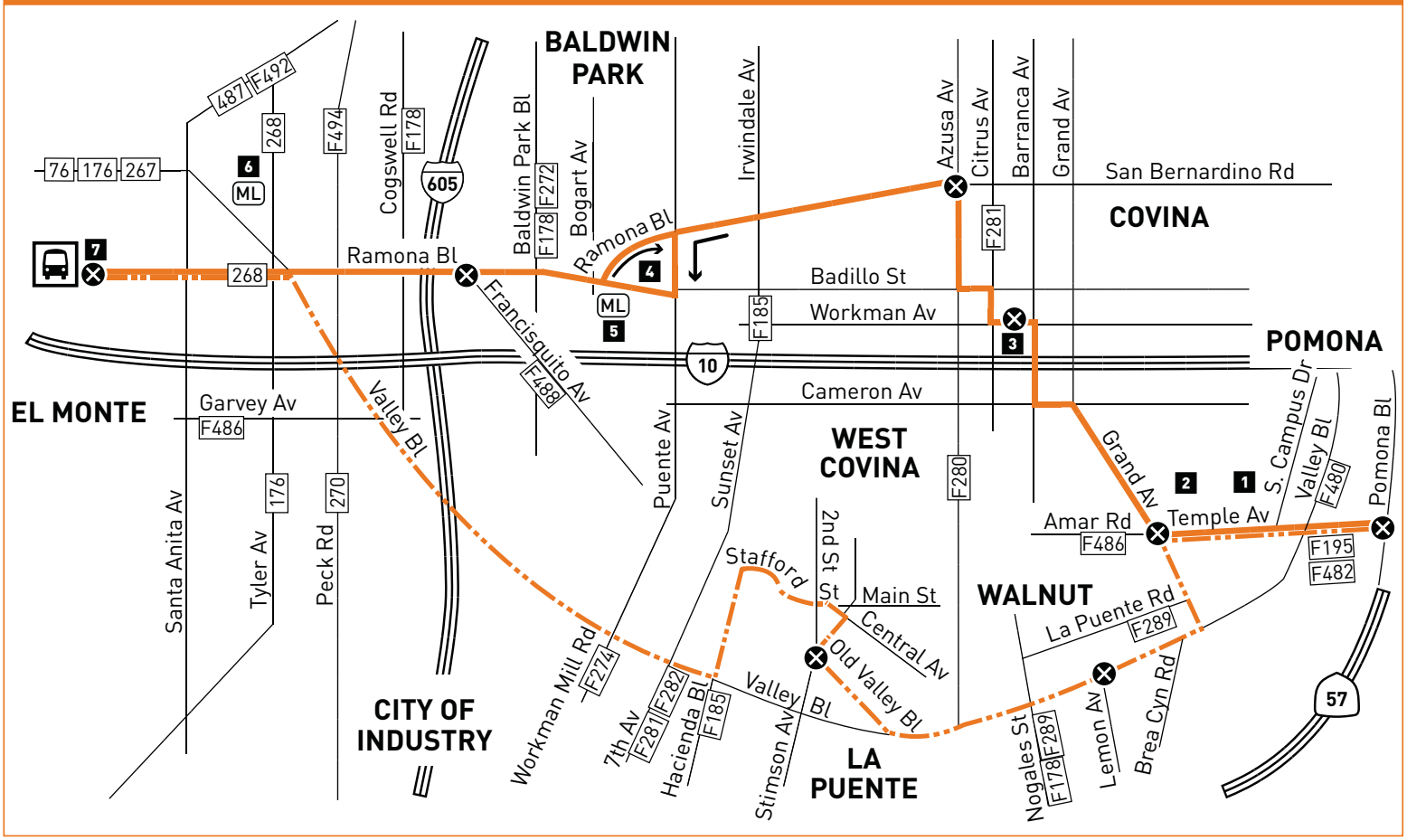
ROUTE MAP



LEGEND

- Line 190 Route
- Line 194 Route
- Timetable Timepoint
- Transit Center
- # Map Notes (see inset)
- ### Connecting Line
- ML Metrolink
- F Foothill Transit

MAP NOTES

1. **Cal Poly Pomona (Temple Av & S. Campus Rd)**
   Metro 190, 194; F195, F289, F480, F482, F486
2. **Mt. San Antonio College**
   Metro 190, 194; F289, F486
3. **Eastland Center (Workman & 2nd / Workman & Palmetto)**
   Metro 190; F281, F284, F480, F488, F851
4. **Baldwin Park - Park & Ride Lot**
5. **Baldwin Park Metrolink Station**
   Metro 190; F178, F272, F274; San Bernardino Line
6. **El Monte Metrolink Station**
   Metro 76, 268; San Bernardino Line
7. **El Monte Station**
   Upper Level: Metro Silver Line; F481, F486, F488, F492, F494, Silver Streak; Greyhound
   Lower Level: Metro 70, 76, 176, 190, 194, 267, 268, 270, 487, 577, 770; F178, F269, F282;
   Mid-day El Monte Commuter Shuttle; Rosemead Explorer

APPENDIX D

TRAFFIC VOLUME DATA

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Hacienda Blvd and Loukelton St , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-001

City: La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach (Hacienda Blvd)

Lanes	0	2	1		
AM	0	1116	52	1228	AM
NOON	0	0	0	0	NOON
PM	0	970	108	1465	PM

Eastbound Approach (Loukelton St)

Lanes	AM	NOON	PM
	0	0	1
0	0	0	0
0	0	0	0
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
55	0	48	0
0	0	0	1
31	0	21	0
90	0	172	

CONTROL: 1-Way Stop (WB)

Northbound Approach

AM	1147	0	1173	38	AM
NOON	0	0	0	0	NOON
PM	991	1	1417	64	PM
		0	2	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	1168	1228	AM
	0	0	NOON
	1078	1465	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	1	86	0	69
0	0	0	90	0	172

	South Leg	
AM	1147	1211
NOON	0	0
PM	991	1482

Total Volume Per Leg

	North Leg
AM	2396
NOON	0
PM	2543

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	1	176	0	241

	South Leg
AM	2358
NOON	0
PM	2473

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-001

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Hacienda Blvd			Hacienda Blvd			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
7:00 AM	0	206	3	4	246	0	0	0	0	5	0	11	475
7:15 AM	0	235	8	10	256	0	0	0	0	7	0	11	527
7:30 AM	0	341	11	15	308	0	0	0	0	3	0	15	693
7:45 AM	0	327	13	17	311	0	0	0	0	14	0	12	694
8:00 AM	0	270	6	10	241	0	0	0	0	7	0	17	551
8:15 AM	0	228	7	15	238	0	0	0	0	2	0	18	508
8:30 AM	0	222	5	10	224	0	0	0	0	4	0	9	474
8:45 AM	0	220	6	8	213	0	0	0	0	5	0	11	463
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2049	59	89	2037	0	0	0	0	47	0	104	4385
APPROACH %'s :	0.00%	97.20%	2.80%	4.19%	95.81%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	31.13%	0.00%	68.87%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	1173	38	52	1116	0	0	0	0	31	0	55	2465
PEAK HR FACTOR :		0.860			0.890			0.000			0.827		0.888

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-001

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Hacienda Blvd			Hacienda Blvd			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
4:00 PM	0	339	13	32	268	0	0	0	0	2	0	6	660
4:15 PM	0	318	8	28	242	0	0	0	0	2	0	8	606
4:30 PM	0	326	14	19	264	0	0	0	0	3	0	9	635
4:45 PM	0	335	13	20	232	0	0	0	0	3	0	12	615
5:00 PM	0	346	15	25	250	0	0	0	0	3	0	16	655
5:15 PM	0	367	20	26	235	0	0	0	0	5	0	13	666
5:30 PM	1	368	15	26	256	0	0	0	0	6	0	11	683
5:45 PM	0	336	14	31	229	0	0	0	0	7	0	8	625
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2735	112	207	1976	0	0	0	0	31	0	83	5145
APPROACH %'s :	0.04%	96.03%	3.93%	9.48%	90.52%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	27.19%	0.00%	72.81%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	1417	64	108	970	0	0	0	0	21	0	48	2629
PEAK HR FACTOR :		0.957			0.956			0.000			0.908		0.962

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-001

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Hacienda Blvd			Hacienda Blvd			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
7:00 AM	0	206	3	4	246	0	0	0	0	5	0	11	475
7:15 AM	0	235	8	10	256	0	0	0	0	7	0	11	527
7:30 AM	0	341	11	15	308	0	0	0	0	3	0	15	693
7:45 AM	0	327	13	17	311	0	0	0	0	14	0	12	694
8:00 AM	0	270	6	10	241	0	0	0	0	7	0	17	551
8:15 AM	0	228	7	15	238	0	0	0	0	2	0	18	508
8:30 AM	0	222	5	10	224	0	0	0	0	4	0	9	474
8:45 AM	0	220	6	8	213	0	0	0	0	5	0	11	463
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2049	59	89	2037	0	0	0	0	47	0	104	4385
APPROACH %'s :	0.00%	97.20%	2.80%	4.19%	95.81%	0.00%				31.13%	0.00%	68.87%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	1173	38	52	1116	0	0	0	0	31	0	55	2465
PEAK HR FACTOR :		0.860			0.890			0.000			0.827		0.888

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-001 | **Day:** Tuesday

CARS

City: La Puente | **Date:** 11/3/2015

PM

NS/EW Streets:	Hacienda Blvd			Hacienda Blvd			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
4:00 PM	0	339	13	32	268	0	0	0	0	2	0	6	660
4:15 PM	0	318	8	28	242	0	0	0	0	2	0	8	606
4:30 PM	0	326	14	19	264	0	0	0	0	3	0	9	635
4:45 PM	0	335	13	20	232	0	0	0	0	3	0	12	615
5:00 PM	0	346	15	25	250	0	0	0	0	3	0	16	655
5:15 PM	0	367	20	26	235	0	0	0	0	5	0	13	666
5:30 PM	1	368	15	26	256	0	0	0	0	6	0	11	683
5:45 PM	0	336	14	31	229	0	0	0	0	7	0	8	625
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2735	112	207	1976	0	0	0	0	31	0	83	5145
APPROACH %'s :	0.04%	96.03%	3.93%	9.48%	90.52%	0.00%				27.19%	0.00%	72.81%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	1417	64	108	970	0	0	0	0	21	0	48	2629
PEAK HR FACTOR :		0.957			0.956			0.000			0.908		0.962

CONTROL : 1-Way Stop (WB)

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-001
N/S Street: Hacienda Blvd
E/W Street: Loukelton St
DATE: 11/3/2015
CITY: La Puente

DAY: Tuesday

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	1	4	0	0
7:15 AM	0	5	0	0	4	2	0	0
7:30 AM	0	1	0	0	1	1	0	0
7:45 AM	0	0	0	1	2	1	0	0
8:00 AM	0	2	0	0	4	3	0	0
8:15 AM	0	0	0	2	2	3	0	0
8:30 AM	0	0	0	2	0	0	0	0
8:45 AM	0	0	0	1	2	3	0	0
TOTALS	**0**	**9**	**0**	**6**	**16**	**17**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	0	1	4	0	0
7:30 AM	0	0	0	0	0	4	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**2**	**9**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	1	0	0	4	1	0	0
4:15 PM	0	1	1	0	3	3	0	0
4:30 PM	0	1	3	0	2	1	0	0
4:45 PM	0	0	0	0	2	0	0	0
5:00 PM	1	2	0	0	1	3	0	0
5:15 PM	0	1	0	0	1	0	0	0
5:30 PM	2	0	1	0	1	0	0	0
5:45 PM	0	1	0	0	0	1	0	0
TOTALS	**3**	**7**	**5**	**0**	**14**	**9**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	2	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-001

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Hacienda Blvd			Hacienda Blvd			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
7:00 AM	0	1	0	1	1	0	0	0	0	0	0	1	4
7:15 AM	0	1	0	0	1	0	0	0	0	2	0	0	4
7:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	3
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:30 AM	0	1	1	0	1	0	0	0	0	0	0	0	3
8:45 AM	0	1	1	0	2	0	0	0	0	0	0	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	6	2	4	7	0	0	0	0	2	0	1	22
APPROACH %'s :	0.00%	75.00%	25.00%	36.36%	63.64%	0.00%				66.67%	0.00%	33.33%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	2	0	3	2	0	0	0	0	2	0	0	9
PEAK HR FACTOR :		0.500			0.417			0.000			0.250		0.563

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-001 | **Day:** Tuesday

BIKES

City: La Puente | **Date:** 11/3/2015

PM

NS/EW Streets:	Hacienda Blvd			Hacienda Blvd			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	1	2	0	0	0	0	0	1	0	
4:00 PM	0	2	0	1	1	0	0	0	0	1	0	0	5
4:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	2
5:15 PM	0	2	0	1	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	10	0	4	1	0	0	0	0	1	0	1	17
APPROACH %'s :	0.00%	100.00%	0.00%	80.00%	20.00%	0.00%				50.00%	0.00%	50.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	5	0	2	0	0	0	0	0	0	0	0	7
PEAK HR FACTOR :		0.625			0.500			0.000			0.000		0.583

CONTROL : 1-Way Stop (WB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Glendora Ave and Sierra Vista Ct , La Puente

Date:	11/3/2015
Day:	Tuesday

Project #:	15-5721-002
City:	La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach (Glendora Ave)

	Lanes 0	2	0		
AM	0	317	51	520	AM
NOON	0	0	0	0	NOON
PM	0	391	51	418	PM

Eastbound Approach (Sierra Vista Ct)

Lanes	AM	NOON	PM
	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Westbound Approach

AM	NOON	PM	Lanes
100	0	36	0
0	0	0	1
45	0	14	0
79	0	72	

CONTROL: 1-Way Stop (WB)

Northbound Approach

AM	362	0	420	28	AM
NOON	0	0	0	0	NOON
PM	405	0	382	21	PM
		0	2	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	4:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	368	520	AM
	0	0	NOON
	442	418	PM

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	0	145	0	50
0	0	0	79	0	72

	South Leg	
AM	362	448
NOON	0	0
PM	405	403

Total Volume Per Leg

	North Leg
AM	888
NOON	0
PM	860

West Leg AM	NOON	PM	East Leg AM	NOON	PM
0	0	0	224	0	122

	South Leg
AM	810
NOON	0
PM	808

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-002

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Glendora Ave			Glendora Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	0	0	0	1	0	
7:00 AM	0	66	6	4	49	0	0	0	0	6	0	7	138
7:15 AM	0	91	8	15	48	0	0	0	0	10	0	24	196
7:30 AM	0	107	11	20	87	0	0	0	0	14	0	41	280
7:45 AM	0	117	7	12	101	0	0	0	0	17	0	19	273
8:00 AM	0	105	2	4	81	0	0	0	0	4	0	16	212
8:15 AM	0	66	2	4	65	0	0	0	0	3	0	5	145
8:30 AM	0	63	1	2	67	0	0	0	0	0	0	6	139
8:45 AM	1	70	1	3	73	0	0	0	0	5	0	11	164
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	685	38	64	571	0	0	0	0	59	0	129	1547
APPROACH %'s :	0.14%	94.61%	5.25%	10.08%	89.92%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	31.38%	0.00%	68.62%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	420	28	51	317	0	0	0	0	45	0	100	961
PEAK HR FACTOR :		0.903			0.814			0.000			0.659		0.858

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-002

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Glendora Ave			Glendora Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	0	0	0	1	0	
4:00 PM	0	86	4	10	84	0	0	0	0	7	0	6	197
4:15 PM	0	86	5	8	97	0	0	0	0	3	0	14	213
4:30 PM	0	93	7	9	111	0	0	0	0	1	0	5	226
4:45 PM	0	98	3	11	83	0	0	0	0	1	0	11	207
5:00 PM	0	98	4	16	88	0	0	0	0	4	0	9	219
5:15 PM	0	95	8	14	92	0	0	0	0	3	0	13	225
5:30 PM	0	102	5	9	115	0	0	0	0	4	0	8	243
5:45 PM	0	87	4	12	96	0	0	0	0	3	0	6	208
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	745	40	89	766	0	0	0	0	26	0	72	1738
APPROACH %'s :	0.00%	94.90%	5.10%	10.41%	89.59%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	26.53%	0.00%	73.47%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	382	21	51	391	0	0	0	0	14	0	36	895
PEAK HR FACTOR :		0.942			0.891			0.000			0.781		0.921

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-002

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Glendora Ave			Glendora Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	0	0	0	1	0	
7:00 AM	0	66	6	4	49	0	0	0	0	6	0	7	138
7:15 AM	0	91	8	15	48	0	0	0	0	10	0	24	196
7:30 AM	0	107	11	20	87	0	0	0	0	14	0	41	280
7:45 AM	0	117	7	12	101	0	0	0	0	17	0	19	273
8:00 AM	0	105	2	4	81	0	0	0	0	4	0	16	212
8:15 AM	0	66	2	4	65	0	0	0	0	3	0	5	145
8:30 AM	0	63	1	2	67	0	0	0	0	0	0	6	139
8:45 AM	1	70	1	3	73	0	0	0	0	5	0	11	164
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	685	38	64	571	0	0	0	0	59	0	129	1547
APPROACH %'s :	0.14%	94.61%	5.25%	10.08%	89.92%	0.00%				31.38%	0.00%	68.62%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	420	28	51	317	0	0	0	0	45	0	100	961
PEAK HR FACTOR :		0.903			0.814			0.000			0.659		0.858

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-002 | **Day:** Tuesday

CARS

City: La Puente | **Date:** 11/3/2015

PM

NS/EW Streets:	Glendora Ave			Glendora Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	0	0	0	1	0	
4:00 PM	0	86	4	10	84	0	0	0	0	7	0	6	197
4:15 PM	0	86	5	8	97	0	0	0	0	3	0	14	213
4:30 PM	0	93	7	9	111	0	0	0	0	1	0	5	226
4:45 PM	0	98	3	11	83	0	0	0	0	1	0	11	207
5:00 PM	0	98	4	16	88	0	0	0	0	4	0	9	219
5:15 PM	0	95	8	14	92	0	0	0	0	3	0	13	225
5:30 PM	0	102	5	9	115	0	0	0	0	4	0	8	243
5:45 PM	0	87	4	12	96	0	0	0	0	3	0	6	208
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	745	40	89	766	0	0	0	0	26	0	72	1738
APPROACH %'s :	0.00%	94.90%	5.10%	10.41%	89.59%	0.00%				26.53%	0.00%	73.47%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	382	21	51	391	0	0	0	0	14	0	36	895
PEAK HR FACTOR :		0.942			0.891			0.000			0.781		0.921

CONTROL : 1-Way Stop (WB)

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-002
N/S Street: Glendora Ave
E/W Street: Sierra Vista Ct
DATE: 11/3/2015
CITY: La Puente

DAY: Tuesday

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	1	0	0	2	0	0	0
7:30 AM	1	2	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0
8:00 AM	0	0	0	0	2	0	0	0
8:15 AM	0	0	0	0	0	1	0	0
8:30 AM	0	1	0	0	0	1	0	0
8:45 AM	0	1	0	0	0	1	0	0
TOTALS	**1**	**5**	**0**	**0**	**5**	**3**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	1	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	1	0	0
5:45 PM	2	3	0	0	2	0	0	0
TOTALS	**3**	**3**	**0**	**0**	**3**	**1**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	2	1	0	0	1	0	0	0
TOTALS	**2**	**1**	**0**	**0**	**1**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-002

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Glendora Ave			Glendora Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	0	0	0	1	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	0	0	0	0	0	0	0	2
APPROACH %'s :				0.00%	100.00%	0.00%							
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	1
PEAK HR FACTOR :		0.000			0.250			0.000			0.000		0.250

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-002 | **Day:** Tuesday

BIKES

City: La Puente | **Date:** 11/3/2015

PM

NS/EW Streets:	Glendora Ave			Glendora Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	0	0	0	0	0	1	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	1	0	0	0	0	0	0	5
APPROACH %'s :				0.00%	80.00%	20.00%							
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	2	1	0	0	0	0	0	0	3
PEAK HR FACTOR :		0.000			0.375			0.000			0.000		0.375

CONTROL : 1-Way Stop (WB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

N 5th St and Sierra Vista Ct , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-003

City: La Puente

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	230 PM

Total Peak Hour Summary

Southbound Approach (N 5th St)

	Lanes 0	1	0		
AM	47	49	69	1	AM
NOON	0	0	0	0	NOON
PM	17	23	24	0	PM

Eastbound Approach (Sierra Vista Ct)

Lanes	AM	NOON	PM
	134	0	73
0	1	0	0
1	82	0	51
0	6	0	10

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
76	0	50	1
20	0	16	0
223	0	108	

Northbound Approach

AM	75	11	0	72	AM
NOON	0	0	0	0	NOON
PM	49	6	0	33	PM
		0	1	0	Lanes

CONTROL

3-Way Stop (NB/EB/WB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	165	1	AM
	0	0	NOON
	64	0	PM

West Leg AM	NOON	PM		East Leg AM	NOON	PM
134	0	73		96	0	66
89	0	61		223	0	108

	South Leg	
AM	75	83
NOON	0	0
PM	49	39

Total Volume Per Leg

	North Leg
AM	166
NOON	0
PM	64

West Leg AM	NOON	PM		East Leg AM	NOON	PM
223	0	134		319	0	174

	South Leg
AM	158
NOON	0
PM	88

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-003

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	N 5th St			N 5th St			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	0	5	6	2	1	1	9	0	0	11	0	35
7:15 AM	3	0	14	14	11	11	0	23	1	6	16	0	99
7:30 AM	5	0	39	35	28	25	0	32	3	7	26	0	200
7:45 AM	3	0	14	14	8	10	0	18	2	7	23	0	99
8:00 AM	0	0	1	1	1	1	1	3	4	4	18	0	34
8:15 AM	1	0	4	0	1	2	0	5	0	2	5	0	20
8:30 AM	1	0	2	0	0	0	0	3	0	3	3	0	12
8:45 AM	3	0	2	0	0	1	0	3	0	0	10	0	19
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	16	0	81	70	51	51	2	96	10	29	112	0	518
APPROACH %'s :	16.49%	0.00%	83.51%	40.70%	29.65%	29.65%	1.85%	88.89%	9.26%	20.57%	79.43%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	11	0	72	69	49	47	1	82	6	20	76	0	433
PEAK HR FACTOR :		0.472			0.469			0.636			0.727		0.541

CONTROL : 3-Way Stop (NB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-003

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	N 5th St			N 5th St			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	2	0	8	1	2	2	0	6	2	2	6	0	31
2:15 PM	3	0	7	0	2	1	0	6	2	4	10	0	35
2:30 PM	3	0	11	9	10	8	0	23	3	9	20	0	96
2:45 PM	0	0	8	10	4	5	0	4	3	3	12	0	49
3:00 PM	2	0	11	3	3	1	0	10	2	3	7	0	42
3:15 PM	1	0	3	2	6	3	0	14	2	1	11	0	43
3:30 PM	1	0	4	2	1	4	0	20	1	5	11	0	49
3:45 PM	4	0	6	7	2	2	0	13	0	3	5	0	42
4:00 PM	2	1	2	1	2	7	1	13	0	3	5	1	38
4:15 PM	2	0	3	3	1	4	0	12	0	0	8	0	33
4:30 PM	0	0	5	3	2	3	0	16	0	2	7	0	38
4:45 PM	3	0	4	5	4	3	0	14	1	2	7	0	43
5:00 PM	1	0	10	4	4	1	0	16	0	1	11	0	48
5:15 PM	0	0	5	4	4	5	0	15	4	3	7	0	47
5:30 PM	3	0	8	12	4	2	0	16	0	4	13	0	62
5:45 PM	0	0	1	2	2	2	0	13	4	4	6	0	34
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	27	1	96	68	53	53	1	211	24	49	146	1	730
APPROACH %'s :	21.77%	0.81%	77.42%	39.08%	30.46%	30.46%	0.42%	89.41%	10.17%	25.00%	74.49%	0.51%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	6	0	33	24	23	17	0	51	10	16	50	0	230
PEAK HR FACTOR :		0.696			0.593			0.587			0.569		0.599

CONTROL : 3-Way Stop (NB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-003

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	N 5th St			N 5th St			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	0	5	6	2	1	1	9	0	0	11	0	35
7:15 AM	3	0	14	14	11	11	0	23	1	6	16	0	99
7:30 AM	5	0	39	35	28	25	0	32	3	7	26	0	200
7:45 AM	3	0	14	14	8	10	0	18	2	7	23	0	99
8:00 AM	0	0	1	1	1	1	1	3	4	4	18	0	34
8:15 AM	1	0	4	0	1	2	0	5	0	2	5	0	20
8:30 AM	1	0	2	0	0	0	0	3	0	3	3	0	12
8:45 AM	3	0	2	0	0	1	0	3	0	0	10	0	19
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	16	0	81	70	51	51	2	96	10	29	112	0	518
APPROACH %'s :	16.49%	0.00%	83.51%	40.70%	29.65%	29.65%	1.85%	88.89%	9.26%	20.57%	79.43%	0.00%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	11	0	72	69	49	47	1	82	6	20	76	0	433
PEAK HR FACTOR :		0.472			0.469			0.636			0.727		0.541

CONTROL : 3-Way Stop (NB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-003

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	N 5th St			N 5th St			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	2	0	8	1	2	2	0	6	2	2	6	0	31
2:15 PM	3	0	7	0	2	1	0	6	2	4	10	0	35
2:30 PM	3	0	11	9	10	8	0	23	3	9	20	0	96
2:45 PM	0	0	8	10	4	5	0	4	3	3	12	0	49
3:00 PM	2	0	11	3	3	1	0	10	2	3	7	0	42
3:15 PM	1	0	3	2	6	3	0	14	2	1	11	0	43
3:30 PM	1	0	4	2	1	4	0	20	1	5	11	0	49
3:45 PM	4	0	6	7	2	2	0	13	0	3	5	0	42
4:00 PM	2	1	2	1	2	7	1	13	0	3	5	1	38
4:15 PM	2	0	3	3	1	4	0	12	0	0	8	0	33
4:30 PM	0	0	5	3	2	3	0	16	0	2	7	0	38
4:45 PM	3	0	4	5	4	3	0	14	1	2	7	0	43
5:00 PM	1	0	10	4	4	1	0	16	0	1	11	0	48
5:15 PM	0	0	5	4	4	5	0	15	4	3	7	0	47
5:30 PM	3	0	8	12	4	2	0	16	0	4	13	0	62
5:45 PM	0	0	1	2	2	2	0	13	4	4	6	0	34
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	27	1	96	68	53	53	1	211	24	49	146	1	730
APPROACH %'s :	21.77%	0.81%	77.42%	39.08%	30.46%	30.46%	0.42%	89.41%	10.17%	25.00%	74.49%	0.51%	

PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	6	0	33	24	23	17	0	51	10	16	50	0	230
PEAK HR FACTOR :		0.696			0.593			0.587			0.569		0.599

CONTROL : 3-Way Stop (NB/EB/WB)

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-003
N/S Street: N 5th St
E/W Street: Sierra Vista Ct
DATE: 11/3/2015
DAY: Tuesday
CITY: La Puente

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	3	0	1	0	0	0	0
7:15 AM	1	3	1	0	0	0	2	0
7:30 AM	2	0	0	1	0	0	8	0
7:45 AM	1	0	2	4	0	0	3	0
8:00 AM	0	2	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	2	0	0	0	0	0	0
8:45 AM	1	0	0	1	0	0	0	0
TOTALS	**5**	**10**	**3**	**7**	**0**	**0**	**13**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	2	0	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	1	1	0	0	0	0	2	0
2:15 PM	0	1	0	2	0	0	0	0
2:30 PM	1	1	0	1	0	0	0	9
2:45 PM	0	1	2	2	1	0	1	5
3:00 PM	0	0	1	0	0	0	0	1
3:15 PM	1	1	0	0	0	0	0	0
3:30 PM	0	2	1	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	2	0	0	0	0	0	0	0
4:45 PM	0	2	1	0	0	0	0	3
5:00 PM	1	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	2
5:45 PM	1	1	0	0	0	0	0	0
TOTALS	**8**	**11**	**5**	**5**	**1**	**0**	**3**	**23**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	1	0	4	0	0	0	0
2:30 PM	2	0	0	0	0	0	0	4
2:45 PM	0	1	0	0	0	0	0	2
3:00 PM	1	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**3**	**2**	**0**	**4**	**0**	**0**	**0**	**6**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-003

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	N 5th St			N 5th St			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	0	0	0	0	0	0	0	0	0	0	3
APPROACH %'s :	0.00%	100.00%	0.00%										
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	2	0	0	0	0	0	0	0	0	0	0	2
PEAK HR FACTOR :		0.500			0.000			0.000			0.000		0.500

CONTROL : 3-Way Stop (NB/EB/WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-003

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	N 5th St			N 5th St			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	1	0	0	2	0	0	0	0	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	2	0	0	0	0	0	0	0	1	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	2	0	3	0	0	2	0	0	3	2	12
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	60.00%	40.00%	
PEAK HR START TIME :	230 PM												TOTAL
PEAK HR VOL :	0	0	0	0	3	0	0	2	0	0	1	0	6
PEAK HR FACTOR :		0.000			0.375			0.250			0.250		0.500

CONTROL : 3-Way Stop (NB/EB/WB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

N 5th St and Temple Ave , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-004

City: La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach (N 5th St)

	Left	Thru	Right	
Lanes	0	1	0	
AM	36	3	12	28
NOON	0	0	0	0
PM	17	1	7	24

Eastbound Approach (Temple Ave)

	AM	NOON	PM
	1243	0	629
Lanes 0	22	0	13
2	562	0	1341
0	3	0	4

Westbound Approach

	AM	NOON	PM	Lanes
	4	0	11	0
	1206	0	610	2
	8	0	2	0
	586	0	1355	

Northbound Approach

	Left	Thru	Right	
AM	14	1	2	12
NOON	0	0	0	0
PM	7	2	0	7
Lanes		0	1	0

CONTROL

2-Way Stop (NB/SB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg	East Leg	South Leg	West Leg
AM	51	1218	14	1243
NOON	0	0	0	0
PM	25	623	7	629
AM	28	586	15	587
NOON	0	0	0	0
PM	24	1355	9	1358

Total Volume Per Leg

	North Leg	East Leg	South Leg	West Leg
AM	79	1804	29	1830
NOON	0	0	0	0
PM	49	1978	16	1987

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-004

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	N 5th St			N 5th St			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
7:00 AM	0	0	1	1	0	3	4	97	2	1	301	1	411
7:15 AM	1	0	2	3	1	9	6	117	0	0	323	1	463
7:30 AM	0	1	6	5	1	15	8	156	1	3	301	2	499
7:45 AM	0	1	2	1	0	9	6	169	1	4	302	1	496
8:00 AM	0	0	2	3	1	3	2	120	1	1	280	0	413
8:15 AM	0	0	2	2	0	3	1	90	0	0	176	2	276
8:30 AM	0	0	1	0	0	3	1	92	0	0	180	1	278
8:45 AM	0	0	2	0	0	2	1	116	0	2	189	1	313
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	18	15	3	47	29	957	5	11	2052	9	3149
APPROACH %'s :	4.76%	9.52%	85.71%	23.08%	4.62%	72.31%	2.93%	96.57%	0.50%	0.53%	99.03%	0.43%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	2	12	12	3	36	22	562	3	8	1206	4	1871
PEAK HR FACTOR :		0.536			0.607			0.834			0.940		0.937

CONTROL : 2-Way Stop (NB/SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-004

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	N 5th St			N 5th St			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
2:00 PM	1	0	0	2	0	2	7	124	1	1	122	0	260
2:15 PM	0	0	2	1	0	5	6	158	0	0	141	1	314
2:30 PM	0	1	1	3	0	9	8	188	0	2	160	0	372
2:45 PM	0	0	2	1	0	7	1	174	3	0	138	2	328
3:00 PM	0	0	2	1	0	6	10	224	0	1	152	3	399
3:15 PM	1	0	2	1	0	4	0	226	0	0	181	3	418
3:30 PM	0	0	0	0	1	0	1	227	0	1	137	0	367
3:45 PM	0	0	1	2	0	2	2	241	1	1	119	5	374
4:00 PM	0	0	1	3	1	4	3	223	0	2	131	2	370
4:15 PM	0	0	2	2	0	1	2	254	2	1	155	1	420
4:30 PM	1	0	1	0	0	7	4	279	0	3	124	1	420
4:45 PM	0	0	2	0	0	5	2	318	1	1	125	0	454
5:00 PM	0	0	0	2	0	2	3	336	2	1	127	4	477
5:15 PM	1	0	3	1	1	6	4	329	0	1	136	1	483
5:30 PM	0	0	3	2	0	5	4	345	1	0	155	4	519
5:45 PM	1	0	1	2	0	4	2	331	1	0	192	2	536
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	1	23	23	3	69	59	3977	12	15	2295	29	6511
APPROACH %'s :	17.24%	3.45%	79.31%	24.21%	3.16%	72.63%	1.46%	98.25%	0.30%	0.64%	98.12%	1.24%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	0	7	7	1	17	13	1341	4	2	610	11	2015
PEAK HR FACTOR :		0.563			0.781			0.970			0.803		0.940

CONTROL : 2-Way Stop (NB/SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-004

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	N 5th St			N 5th St			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
7:00 AM	0	0	1	1	0	3	4	97	2	1	301	1	411
7:15 AM	1	0	2	3	1	9	6	117	0	0	323	1	463
7:30 AM	0	1	6	5	1	15	8	156	1	3	301	2	499
7:45 AM	0	1	2	1	0	9	6	169	1	4	302	1	496
8:00 AM	0	0	2	3	1	3	2	120	1	1	280	0	413
8:15 AM	0	0	2	2	0	3	1	90	0	0	176	2	276
8:30 AM	0	0	1	0	0	3	1	92	0	0	180	1	278
8:45 AM	0	0	2	0	0	2	1	116	0	2	189	1	313
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	18	15	3	47	29	957	5	11	2052	9	3149
APPROACH %'s :	4.76%	9.52%	85.71%	23.08%	4.62%	72.31%	2.93%	96.57%	0.50%	0.53%	99.03%	0.43%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	2	12	12	3	36	22	562	3	8	1206	4	1871
PEAK HR FACTOR :		0.536			0.607			0.834			0.940		0.937

CONTROL : 2-Way Stop (NB/SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-004

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	N 5th St			N 5th St			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
2:00 PM	1	0	0	2	0	2	7	124	1	1	122	0	260
2:15 PM	0	0	2	1	0	5	6	158	0	0	141	1	314
2:30 PM	0	1	1	3	0	9	8	188	0	2	160	0	372
2:45 PM	0	0	2	1	0	7	1	174	3	0	138	2	328
3:00 PM	0	0	2	1	0	6	10	224	0	1	152	3	399
3:15 PM	1	0	2	1	0	4	0	226	0	0	181	3	418
3:30 PM	0	0	0	0	1	0	1	227	0	1	137	0	367
3:45 PM	0	0	1	2	0	2	2	241	1	1	119	5	374
4:00 PM	0	0	1	3	1	4	3	223	0	2	131	2	370
4:15 PM	0	0	2	2	0	1	2	254	2	1	155	1	420
4:30 PM	1	0	1	0	0	7	4	279	0	3	124	1	420
4:45 PM	0	0	2	0	0	5	2	318	1	1	125	0	454
5:00 PM	0	0	0	2	0	2	3	336	2	1	127	4	477
5:15 PM	1	0	3	1	1	6	4	329	0	1	136	1	483
5:30 PM	0	0	3	2	0	5	4	345	1	0	155	4	519
5:45 PM	1	0	1	2	0	4	2	331	1	0	192	2	536
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	1	23	23	3	69	59	3977	12	15	2295	29	6511
APPROACH %'s :	17.24%	3.45%	79.31%	24.21%	3.16%	72.63%	1.46%	98.25%	0.30%	0.64%	98.12%	1.24%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	0	7	7	1	17	13	1341	4	2	610	11	2015
PEAK HR FACTOR :		0.563			0.781			0.970			0.803		0.940

CONTROL : 2-Way Stop (NB/SB)

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-004
N/S Street: N 5th St
E/W Street: Temple Ave
DATE: 11/3/2015
CITY: La Puente

DAY: Tuesday

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	2	0	0	0	0
7:15 AM	0	0	1	3	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0
7:45 AM	0	2	1	0	0	0	0	0
8:00 AM	0	1	2	2	0	0	0	0
8:15 AM	0	0	1	1	0	0	0	0
8:30 AM	1	0	0	0	0	0	0	0
8:45 AM	0	0	3	2	0	0	0	0
TOTALS	**1**	**4**	**8**	**10**	**0**	**0**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	0	1	1	0	0	0	0
2:30 PM	1	0	0	0	0	0	0	0
2:45 PM	0	0	1	2	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	5	2	1	0	0	2	0
3:30 PM	1	2	0	0	1	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	1	1	0	0	0	0
4:15 PM	0	1	0	16	0	0	0	0
4:30 PM	0	0	2	5	0	0	0	0
4:45 PM	0	0	1	1	0	0	0	0
5:00 PM	1	0	1	0	0	0	0	1
5:15 PM	0	0	2	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**3**	**8**	**12**	**27**	**1**	**0**	**2**	**2**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	2	0	0	1	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-004

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	N 5th St			N 5th St			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	1	0	0	2	0	3
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	1	0	2
PEAK HR FACTOR :		0.000			0.000			0.250			0.250		0.250

CONTROL : 2-Way Stop (NB/SB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-004

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	N 5th St			N 5th St			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	2	0	0	2	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
3:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	2	0	4	0	0	3	1	10
APPROACH %'s :				0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	75.00%	25.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	2	0	0	1	0	3
PEAK HR FACTOR :		0.000			0.000			0.500			0.250		0.750

CONTROL : 2-Way Stop (NB/SB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Del Valle Ave and Amar Rd , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-005

City: La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach (Del Valle Ave)

	Lanes	0	0	0		
AM		0	0	0	0	AM
NOON		0	0	0	0	NOON
PM		0	0	0	0	PM

Eastbound Approach (Amar Rd)

	AM	NOON	PM
	1544	0	946
0	0	0	0
2	742	0	1175
0	118	0	92
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
1364	0	845	2
132	0	112	1
865	0	1337	
AM	NOON	PM	

CONTROL

Signalized

Northbound Approach

AM	250	180	0	123	AM
NOON	0	0	0	0	NOON
PM	204	101	0	162	PM
		0	1	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	0	0	AM
	0	0	NOON
	0	0	PM

West Leg	AM	NOON	PM
	1544	0	946
	860	0	1267

East Leg	AM	NOON	PM
	1496	0	957
	865	0	1337

South Leg		
AM	250	303
NOON	0	0
PM	204	263

Total Volume Per Leg

North Leg	
0	AM
0	NOON
0	PM

West Leg	AM	NOON	PM
	2404	0	2213

East Leg	AM	NOON	PM
	2361	0	2294

South Leg	
AM	553
NOON	0
PM	467

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-005

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Amar Rd			Amar Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	1	2	0	
7:00 AM	18	0	15	0	0	0	0	126	14	19	417	0	609
7:15 AM	27	0	21	0	0	0	0	163	23	18	374	0	626
7:30 AM	54	0	38	0	0	0	0	157	39	57	317	0	662
7:45 AM	53	0	36	0	0	0	0	221	42	40	355	0	747
8:00 AM	46	0	28	0	0	0	0	201	14	17	318	0	624
8:15 AM	18	0	19	0	0	0	0	143	20	13	286	0	499
8:30 AM	14	0	18	0	0	0	0	140	12	11	253	0	448
8:45 AM	14	0	20	0	0	0	0	145	10	16	232	0	437
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	244	0	195	0	0	0	0	1296	174	191	2552	0	4652
APPROACH %'s :	55.58%	0.00%	44.42%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	88.16%	11.84%	6.96%	93.04%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	180	0	123	0	0	0	0	742	118	132	1364	0	2659
PEAK HR FACTOR :		0.823			0.000			0.817			0.947		0.890

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-005

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Amar Rd			Amar Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	1	2	0	
2:00 PM	26	0	33	0	0	0	0	228	16	25	224	0	552
2:15 PM	28	0	21	0	0	0	0	265	19	26	203	0	562
2:30 PM	23	0	33	0	0	0	0	256	25	20	193	0	550
2:45 PM	30	0	35	0	0	0	0	275	21	29	201	0	591
3:00 PM	21	0	39	0	0	0	0	291	24	29	209	0	613
3:15 PM	22	0	35	0	0	0	0	279	23	21	226	0	606
3:30 PM	26	0	42	0	0	0	0	312	21	34	220	0	655
3:45 PM	32	0	46	0	0	0	0	293	24	28	190	0	613
4:00 PM	26	0	33	0	0	0	2	242	16	27	239	0	585
4:15 PM	28	0	21	0	0	0	0	265	19	26	203	0	562
4:30 PM	23	0	33	0	0	0	0	256	25	20	193	0	550
4:45 PM	30	0	35	0	0	0	0	275	21	29	201	0	591
5:00 PM	21	0	39	0	0	0	0	291	24	29	209	0	613
5:15 PM	22	0	35	0	0	0	0	279	23	21	226	0	606
5:30 PM	26	0	42	0	0	0	0	312	21	34	220	0	655
5:45 PM	32	0	46	0	0	0	0	293	24	28	190	0	613
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	416	0	568	0	0	0	2	4412	346	426	3347	0	9517
APPROACH %'s :	42.28%	0.00%	57.72%	#DIV/0!	#DIV/0!	#DIV/0!	0.04%	92.69%	7.27%	11.29%	88.71%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	101	0	162	0	0	0	0	1175	92	112	845	0	2487
PEAK HR FACTOR :		0.843			0.000			0.951			0.942		0.949

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-005 | **Day:** Tuesday

CARS

City: La Puente | **Date:** 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Amar Rd			Amar Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	1	2	0	
7:00 AM	18	0	15	0	0	0	0	126	14	19	417	0	609
7:15 AM	27	0	21	0	0	0	0	163	23	18	374	0	626
7:30 AM	54	0	38	0	0	0	0	157	39	57	317	0	662
7:45 AM	53	0	36	0	0	0	0	221	42	40	355	0	747
8:00 AM	46	0	28	0	0	0	0	201	14	17	318	0	624
8:15 AM	18	0	19	0	0	0	0	143	20	13	286	0	499
8:30 AM	14	0	18	0	0	0	0	140	12	11	253	0	448
8:45 AM	14	0	20	0	0	0	0	145	10	16	232	0	437
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	244	0	195	0	0	0	0	1296	174	191	2552	0	4652
APPROACH %'s :	55.58%	0.00%	44.42%				0.00%	88.16%	11.84%	6.96%	93.04%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	180	0	123	0	0	0	0	742	118	132	1364	0	2659
PEAK HR FACTOR :		0.823			0.000			0.817			0.947		0.890

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-005

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Amar Rd			Amar Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	1	2	0	
2:00 PM	26	0	33	0	0	0	0	228	16	25	224	0	552
2:15 PM	28	0	21	0	0	0	0	265	19	26	203	0	562
2:30 PM	23	0	33	0	0	0	0	256	25	20	193	0	550
2:45 PM	30	0	35	0	0	0	0	275	21	29	201	0	591
3:00 PM	21	0	39	0	0	0	0	291	24	29	209	0	613
3:15 PM	22	0	35	0	0	0	0	279	23	21	226	0	606
3:30 PM	26	0	42	0	0	0	0	312	21	34	220	0	655
3:45 PM	32	0	46	0	0	0	0	293	24	28	190	0	613
4:00 PM	26	0	33	0	0	0	2	242	16	27	239	0	585
4:15 PM	28	0	21	0	0	0	0	265	19	26	203	0	562
4:30 PM	23	0	33	0	0	0	0	256	25	20	193	0	550
4:45 PM	30	0	35	0	0	0	0	275	21	29	201	0	591
5:00 PM	21	0	39	0	0	0	0	291	24	29	209	0	613
5:15 PM	22	0	35	0	0	0	0	279	23	21	226	0	606
5:30 PM	26	0	42	0	0	0	0	312	21	34	220	0	655
5:45 PM	32	0	46	0	0	0	0	293	24	28	190	0	613
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	416	0	568	0	0	0	2	4412	346	426	3347	0	9517
APPROACH %'s :	42.28%	0.00%	57.72%				0.04%	92.69%	7.27%	11.29%	88.71%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	101	0	162	0	0	0	0	1175	92	112	845	0	2487
PEAK HR FACTOR :		0.843			0.000			0.951			0.942		0.949

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-005
N/S Street: Del Valle Ave
E/W Street: Amar Rd
DATE: 11/3/2015
CITY: La Puente

DAY: Tuesday

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	3	0	0	0	0	2
7:15 AM	0	0	0	0	0	0	2	4
7:30 AM	0	0	0	0	0	0	3	4
7:45 AM	0	0	0	0	0	0	1	8
8:00 AM	0	0	0	0	0	0	1	1
8:15 AM	0	0	1	0	0	0	2	1
8:30 AM	0	0	0	1	0	0	2	3
8:45 AM	0	0	1	0	0	0	1	1
TOTALS	**0**	**0**	**5**	**1**	**0**	**0**	**12**	**24**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	4
7:30 AM	0	0	0	0	0	0	1	2
7:45 AM	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**9**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	2	3
2:15 PM	0	0	0	0	0	0	4	6
2:30 PM	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	1	0	0	7	6
3:00 PM	0	0	0	1	0	0	3	2
3:15 PM	0	0	0	1	0	0	9	5
3:30 PM	0	0	0	0	0	0	8	4
3:45 PM	0	0	3	1	0	0	4	4
4:00 PM	0	0	0	0	0	0	5	3
4:15 PM	0	0	0	1	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	4	0
5:00 PM	0	0	0	0	0	0	7	3
5:15 PM	0	0	0	1	0	0	0	0
5:30 PM	0	0	0	0	0	0	2	3
5:45 PM	0	0	1	2	0	0	4	4
TOTALS	**0**	**0**	**4**	**8**	**0**	**0**	**59**	**48**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	2
2:30 PM	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	1	5
3:00 PM	0	0	0	0	0	0	2	0
3:15 PM	0	0	0	0	0	0	7	0
3:30 PM	0	0	0	0	0	0	2	0
3:45 PM	0	0	0	0	0	0	5	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**10**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-005 | **Day:** Tuesday

BIKES

City: La Puente | **Date:** 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Amar Rd			Amar Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	1	2	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	2
7:45 AM	1	0	0	0	0	0	0	1	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	1	0	0	0	0	1	0	0	1	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	1	0	0	0	0	2	2	0	2	0	8
APPROACH %'s :	50.00%	0.00%	50.00%				0.00%	50.00%	50.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	0	0	0	0	0	0	1	2	0	1	0	5
PEAK HR FACTOR :	0.250			0.000			0.375			0.250			0.625

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-005

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Amar Rd			Amar Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	2	0	1	2	0	
2:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	1	0	0	0	0	1	0	0	0	0	2
3:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	1	0	0	0	0	0	0	0	1	0	0	0	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	1	0	1	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	0	1	0	0	0	0	1	0	1	1	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	0	3	0	0	0	0	5	2	1	2	0	15
APPROACH %'s :	40.00%	0.00%	60.00%				0.00%	71.43%	28.57%	33.33%	66.67%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	2	0	0	0	0	2	0	1	1	0	7
PEAK HR FACTOR :	0.375			0.000			0.500			0.250			0.438

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Del Valle Ave and Loukelton St , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-006

City: La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	215 PM

Total Peak Hour Summary

Southbound Approach (Del Valle Ave)

	Lanes 0	1	0	
AM	19	213	51	293 AM
NOON	0	0	0	0 NOON
PM	27	128	69	228 PM

Eastbound Approach (Loukelton St)

Lanes	AM	NOON	PM
	69	0	60
0	18	0	35
1	26	0	30
0	57	0	38

Westbound Approach

Lanes	AM	NOON	PM
0	126	0	66
1	26	0	9
0	42	0	17
	87	0	111

CONTROL: 4-Way Stop

Northbound Approach

AM	312	24	149	10 AM
NOON	0	0	0	0 NOON
PM	183	24	127	12 PM
Lanes		0	1	0 Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	283	0	224
	293	0	228
West Leg	69	0	60
	101	0	103
East Leg	194	0	92
	87	0	111
South Leg	312	0	183
	183	0	163

Total Volume Per Leg

	AM	NOON	PM
North Leg	576	0	452
West Leg	170	0	163
East Leg	281	0	203
South Leg	495	0	346

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-006

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	2	15	0	7	27	1	2	0	2	3	5	21	85
7:15 AM	4	26	0	7	40	5	6	5	10	7	5	13	128
7:30 AM	6	45	1	13	85	3	1	8	18	8	6	39	233
7:45 AM	5	42	5	25	60	6	9	6	24	17	6	44	249
8:00 AM	9	36	4	6	28	5	2	7	5	10	9	30	151
8:15 AM	4	20	1	16	19	1	2	4	3	1	6	10	87
8:30 AM	1	14	2	4	16	3	4	2	4	0	4	16	70
8:45 AM	4	21	0	3	21	4	5	3	2	1	5	9	78
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	35	219	13	81	296	28	31	35	68	47	46	182	1081
APPROACH %'s :	13.11%	82.02%	4.87%	20.00%	73.09%	6.91%	23.13%	26.12%	50.75%	17.09%	16.73%	66.18%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	24	149	10	51	213	19	18	26	57	42	26	126	761
PEAK HR FACTOR :		0.880			0.700			0.647			0.724		0.764

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-006

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	8	23	1	15	32	5	7	4	7	6	3	19	130
2:15 PM	7	24	4	17	38	7	2	7	13	9	4	17	149
2:30 PM	10	36	4	13	36	5	21	2	11	5	1	16	160
2:45 PM	6	42	3	22	23	10	1	12	8	2	1	13	143
3:00 PM	1	25	1	17	31	5	11	9	6	1	3	20	130
3:15 PM	3	41	1	8	27	4	11	5	6	5	2	17	130
3:30 PM	4	31	2	14	24	6	6	5	5	0	2	14	113
3:45 PM	1	43	0	14	26	5	10	5	6	1	4	14	129
4:00 PM	4	32	1	10	24	5	10	11	8	2	1	14	122
4:15 PM	3	32	1	15	21	4	6	10	7	0	2	14	115
4:30 PM	3	29	0	13	21	6	15	8	5	0	6	16	122
4:45 PM	4	40	1	9	43	3	9	6	3	0	5	18	141
5:00 PM	4	39	2	12	27	3	12	7	5	1	1	11	124
5:15 PM	3	39	2	13	24	5	15	9	5	2	5	5	127
5:30 PM	9	46	2	8	33	3	15	7	8	5	2	10	148
5:45 PM	5	42	1	18	30	4	8	14	9	2	4	12	149
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	75	564	26	218	460	80	159	121	112	41	46	230	2132
APPROACH %'s :	11.28%	84.81%	3.91%	28.76%	60.69%	10.55%	40.56%	30.87%	28.57%	12.93%	14.51%	72.56%	
PEAK HR START TIME :	215 PM												TOTAL
PEAK HR VOL :	24	127	12	69	128	27	35	30	38	17	9	66	582
PEAK HR FACTOR :		0.799			0.903			0.757			0.767		0.909

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-006

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	2	15	0	7	27	1	2	0	2	3	5	21	85
7:15 AM	4	26	0	7	40	5	6	5	10	7	5	13	128
7:30 AM	6	45	1	13	85	3	1	8	18	8	6	39	233
7:45 AM	5	42	5	25	60	6	9	6	24	17	6	44	249
8:00 AM	9	36	4	6	28	5	2	7	5	10	9	30	151
8:15 AM	4	20	1	16	19	1	2	4	3	1	6	10	87
8:30 AM	1	14	2	4	16	3	4	2	4	0	4	16	70
8:45 AM	4	21	0	3	21	4	5	3	2	1	5	9	78
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	35	219	13	81	296	28	31	35	68	47	46	182	1081
APPROACH %'s :	13.11%	82.02%	4.87%	20.00%	73.09%	6.91%	23.13%	26.12%	50.75%	17.09%	16.73%	66.18%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	24	149	10	51	213	19	18	26	57	42	26	126	761
PEAK HR FACTOR :		0.880			0.700			0.647			0.724		0.764

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-006

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	8	23	1	15	32	5	7	4	7	6	3	19	130
2:15 PM	7	24	4	17	38	7	2	7	13	9	4	17	149
2:30 PM	10	36	4	13	36	5	21	2	11	5	1	16	160
2:45 PM	6	42	3	22	23	10	1	12	8	2	1	13	143
3:00 PM	1	25	1	17	31	5	11	9	6	1	3	20	130
3:15 PM	3	41	1	8	27	4	11	5	6	5	2	17	130
3:30 PM	4	31	2	14	24	6	6	5	5	0	2	14	113
3:45 PM	1	43	0	14	26	5	10	5	6	1	4	14	129
4:00 PM	4	32	1	10	24	5	10	11	8	2	1	14	122
4:15 PM	3	32	1	15	21	4	6	10	7	0	2	14	115
4:30 PM	3	29	0	13	21	6	15	8	5	0	6	16	122
4:45 PM	4	40	1	9	43	3	9	6	3	0	5	18	141
5:00 PM	4	39	2	12	27	3	12	7	5	1	1	11	124
5:15 PM	3	39	2	13	24	5	15	9	5	2	5	5	127
5:30 PM	9	46	2	8	33	3	15	7	8	5	2	10	148
5:45 PM	5	42	1	18	30	4	8	14	9	2	4	12	149
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	75	564	26	218	460	80	159	121	112	41	46	230	2132
APPROACH %'s :	11.28%	84.81%	3.91%	28.76%	60.69%	10.55%	40.56%	30.87%	28.57%	12.93%	14.51%	72.56%	
PEAK HR START TIME :	215 PM												TOTAL
PEAK HR VOL :	24	127	12	69	128	27	35	30	38	17	9	66	582
PEAK HR FACTOR :		0.799			0.903			0.757			0.767		0.909

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-006
N/S Street: Del Valle Ave
E/W Street: Loukelton St
DATE: 11/3/2015
CITY: La Puente

DAY: Tuesday

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	0	0	0	0	0	1	6
7:15 AM	6	2	1	1	0	1	1	7
7:30 AM	7	0	1	1	0	1	3	8
7:45 AM	2	1	0	4	0	2	2	18
8:00 AM	1	0	2	0	0	0	8	2
8:15 AM	0	0	0	1	1	1	0	0
8:30 AM	0	0	0	1	0	1	1	2
8:45 AM	1	0	1	0	1	0	5	1
TOTALS	**19**	**3**	**5**	**8**	**2**	**6**	**21**	**44**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	1	4
7:15 AM	0	0	0	0	0	0	0	7
7:30 AM	0	0	0	1	0	0	1	4
7:45 AM	0	1	0	3	0	1	0	10
8:00 AM	0	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**0**	**4**	**0**	**1**	**3**	**25**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	1	0	0	5	5
2:15 PM	1	0	2	3	0	0	5	10
2:30 PM	1	0	1	0	0	0	11	1
2:45 PM	2	1	1	0	0	1	14	1
3:00 PM	0	0	0	0	0	0	0	2
3:15 PM	0	21	0	2	1	0	4	4
3:30 PM	4	1	0	3	0	0	4	1
3:45 PM	0	0	0	0	0	0	1	1
4:00 PM	0	1	0	3	0	0	0	1
4:15 PM	0	0	1	0	0	0	0	1
4:30 PM	1	0	2	0	1	0	0	0
4:45 PM	0	0	0	0	0	0	1	1
5:00 PM	0	1	1	0	0	0	2	1
5:15 PM	6	0	0	0	0	0	1	1
5:30 PM	1	0	0	0	0	0	2	1
5:45 PM	0	0	1	1	0	0	0	2
TOTALS	**16**	**25**	**9**	**13**	**2**	**1**	**50**	**33**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	3	1
2:15 PM	0	0	2	0	0	0	4	1
2:30 PM	0	0	0	0	0	0	7	0
2:45 PM	0	0	0	0	0	0	4	1
3:00 PM	0	0	0	0	0	0	1	0
3:15 PM	0	13	0	2	2	0	0	2
3:30 PM	1	1	0	1	0	0	1	0
3:45 PM	0	0	0	1	0	0	1	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0
5:00 PM	0	1	0	0	0	0	1	1
5:15 PM	3	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0
5:45 PM	0	0	1	0	0	0	0	0
TOTALS	**4**	**16**	**3**	**4**	**2**	**0**	**23**	**6**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-006

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	1	0	0	2	0	0	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
8:00 AM	0	0	0	0	1	0	0	2	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	0	0	5	0	0	0	1	8
APPROACH %'s :				0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	2	0	0	4	0	0	0	1	7
PEAK HR FACTOR :		0.000			0.500			0.500			0.250		0.583

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-006

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Loukelton St			Loukelton St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
3:00 PM	0	0	0	0	1	0	0	0	1	0	0	1	3
3:15 PM	0	1	1	0	0	0	0	0	0	0	1	0	3
3:30 PM	1	2	0	0	0	0	0	0	0	0	0	0	3
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	2
5:30 PM	0	2	0	0	1	0	0	0	0	1	0	0	4
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	11	1	0	3	0	0	0	2	1	2	1	22
APPROACH %'s :	7.69%	84.62%	7.69%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	25.00%	50.00%	25.00%	
PEAK HR START TIME :	215 PM												TOTAL
PEAK HR VOL :	0	2	0	0	1	0	0	0	1	0	0	1	5
PEAK HR FACTOR :		0.250			0.250			0.250			0.250		0.417

CONTROL : 4-Way Stop

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Del Valle Ave and Mentz St , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-007

City: La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach (Del Valle Ave)

Lanes	0	1	0		
AM	0	270	50	216	AM
NOON	0	0	0	0	NOON
PM	2	126	29	195	PM

Eastbound Approach (Mentz St)

	AM	NOON	PM
	0	0	4
0	3	0	2
1	0	0	0
0	5	0	0
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
20	0	20	0
0	0	0	1
57	0	18	0
73	0	54	
AM	NOON	PM	

CONTROL: 4-Way Stop

Northbound Approach

AM	332	0	193	23	AM
NOON	0	0	0	0	NOON
PM	144	2	173	25	PM
		0	1	0	Lanes

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	320	216	AM
	0	0	NOON
	157	195	PM

West Leg AM	NOON	PM		East Leg AM	NOON	PM
0	0	4		77	0	38
8	0	2		73	0	54

	South Leg	
AM	332	216
NOON	0	0
PM	144	200

Total Volume Per Leg

	North Leg
AM	536
NOON	0
PM	352

West Leg AM	NOON	PM		East Leg AM	NOON	PM
8	0	6		150	0	92

	South Leg
AM	548
NOON	0
PM	344

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-007

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Mentz St			Mentz St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	20	1	1	29	0	0	0	2	10	0	1	64
7:15 AM	0	32	7	6	47	0	0	0	0	14	0	5	111
7:30 AM	0	70	5	14	93	0	3	0	5	15	0	5	210
7:45 AM	0	63	5	18	70	0	0	0	0	18	0	8	182
8:00 AM	0	28	6	12	60	0	0	0	0	10	0	2	118
8:15 AM	0	21	3	1	19	0	0	0	0	5	0	1	50
8:30 AM	0	11	1	1	19	0	0	0	0	1	0	2	35
8:45 AM	0	23	1	4	23	0	0	0	0	9	0	2	62
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	268	29	57	360	0	3	0	7	82	0	26	832
APPROACH %'s :	0.00%	90.24%	9.76%	13.67%	86.33%	0.00%	30.00%	0.00%	70.00%	75.93%	0.00%	24.07%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	193	23	50	270	0	3	0	5	57	0	20	621
PEAK HR FACTOR :		0.720			0.748			0.250			0.740		0.739

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-007

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Mentz St			Mentz St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	0	29	1	9	27	0	2	0	0	4	0	2	74
2:15 PM	0	33	1	11	43	0	0	0	0	4	0	4	96
2:30 PM	0	32	4	9	65	1	0	0	0	4	0	4	119
2:45 PM	0	38	8	6	31	0	0	0	0	10	0	2	95
3:00 PM	0	25	7	3	31	1	1	0	1	3	0	2	74
3:15 PM	0	38	3	5	29	0	1	0	1	5	0	4	86
3:30 PM	2	25	4	5	25	0	1	0	0	8	0	3	73
3:45 PM	1	46	6	6	25	0	0	0	0	2	0	2	88
4:00 PM	0	23	8	3	33	1	1	0	0	4	0	2	75
4:15 PM	0	28	8	1	26	0	0	0	0	4	0	5	72
4:30 PM	0	30	4	3	23	0	0	0	0	1	0	1	62
4:45 PM	0	42	5	2	35	5	0	0	2	4	0	2	97
5:00 PM	0	41	6	8	25	0	1	0	0	5	0	6	92
5:15 PM	1	40	8	3	24	1	0	0	0	4	0	3	84
5:30 PM	1	54	8	12	40	0	0	0	0	4	0	4	123
5:45 PM	0	38	3	6	37	1	1	0	0	5	0	7	98
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	562	84	92	519	10	8	0	4	71	0	53	1408
APPROACH %'s :	0.77%	86.33%	12.90%	14.81%	83.57%	1.61%	66.67%	0.00%	33.33%	57.26%	0.00%	42.74%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	173	25	29	126	2	2	0	0	18	0	20	397
PEAK HR FACTOR :		0.794			0.755			0.500			0.792		0.807

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-007

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Mentz St			Mentz St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	20	1	1	29	0	0	0	2	10	0	1	64
7:15 AM	0	32	7	6	47	0	0	0	0	14	0	5	111
7:30 AM	0	70	5	14	93	0	3	0	5	15	0	5	210
7:45 AM	0	63	5	18	70	0	0	0	0	18	0	8	182
8:00 AM	0	28	6	12	60	0	0	0	0	10	0	2	118
8:15 AM	0	21	3	1	19	0	0	0	0	5	0	1	50
8:30 AM	0	11	1	1	19	0	0	0	0	1	0	2	35
8:45 AM	0	23	1	4	23	0	0	0	0	9	0	2	62
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	268	29	57	360	0	3	0	7	82	0	26	832
APPROACH %'s :	0.00%	90.24%	9.76%	13.67%	86.33%	0.00%	30.00%	0.00%	70.00%	75.93%	0.00%	24.07%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	193	23	50	270	0	3	0	5	57	0	20	621
PEAK HR FACTOR :		0.720			0.748			0.250			0.740		0.739

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-007

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Mentz St			Mentz St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	0	29	1	9	27	0	2	0	0	4	0	2	74
2:15 PM	0	33	1	11	43	0	0	0	0	4	0	4	96
2:30 PM	0	32	4	9	65	1	0	0	0	4	0	4	119
2:45 PM	0	38	8	6	31	0	0	0	0	10	0	2	95
3:00 PM	0	25	7	3	31	1	1	0	1	3	0	2	74
3:15 PM	0	38	3	5	29	0	1	0	1	5	0	4	86
3:30 PM	2	25	4	5	25	0	1	0	0	8	0	3	73
3:45 PM	1	46	6	6	25	0	0	0	0	2	0	2	88
4:00 PM	0	23	8	3	33	1	1	0	0	4	0	2	75
4:15 PM	0	28	8	1	26	0	0	0	0	4	0	5	72
4:30 PM	0	30	4	3	23	0	0	0	0	1	0	1	62
4:45 PM	0	42	5	2	35	5	0	0	2	4	0	2	97
5:00 PM	0	41	6	8	25	0	1	0	0	5	0	6	92
5:15 PM	1	40	8	3	24	1	0	0	0	4	0	3	84
5:30 PM	1	54	8	12	40	0	0	0	0	4	0	4	123
5:45 PM	0	38	3	6	37	1	1	0	0	5	0	7	98
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	562	84	92	519	10	8	0	4	71	0	53	1408
APPROACH %'s :	0.77%	86.33%	12.90%	14.81%	83.57%	1.61%	66.67%	0.00%	33.33%	57.26%	0.00%	42.74%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	173	25	29	126	2	2	0	0	18	0	20	397
PEAK HR FACTOR :		0.794			0.755			0.500			0.792		0.807

CONTROL : 4-Way Stop

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-007
N/S Street: Del Valle Ave
E/W Street: Mentz St
DATE: 11/3/2015 DAY: Tuesday
CITY: La Puente

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	7	0	0	0	0	2	5
7:15 AM	3	13	1	0	0	0	9	24
7:30 AM	5	15	1	0	6	1	14	10
7:45 AM	6	7	1	1	0	2	8	7
8:00 AM	5	5	0	0	0	1	0	4
8:15 AM	0	0	0	0	1	1	1	0
8:30 AM	0	0	0	2	0	0	3	1
8:45 AM	0	1	1	0	1	0	1	2
TOTALS	**19**	**48**	**4**	**3**	**8**	**5**	**38**	**53**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	3	0	0	0	0	1	1
7:15 AM	0	5	0	0	1	0	4	7
7:30 AM	2	4	0	0	2	0	8	1
7:45 AM	0	2	0	0	0	0	3	1
8:00 AM	0	3	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	1
TOTALS	**2**	**17**	**0**	**0**	**3**	**0**	**17**	**12**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	1	0	0	0	0	4	7
2:15 PM	0	2	0	0	0	0	1	2
2:30 PM	18	0	2	0	0	6	1	12
2:45 PM	4	0	0	0	0	0	19	0
3:00 PM	0	4	0	0	1	0	0	3
3:15 PM	0	4	0	1	3	0	4	3
3:30 PM	2	0	0	0	0	3	1	1
3:45 PM	1	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1
4:45 PM	1	0	0	3	0	1	1	0
5:00 PM	2	0	0	0	0	0	9	1
5:15 PM	0	0	0	0	1	1	1	0
5:30 PM	1	3	2	0	1	2	3	6
5:45 PM	2	2	1	0	0	2	2	5
TOTALS	**31**	**16**	**5**	**4**	**6**	**15**	**46**	**41**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	2
2:15 PM	0	0	0	0	0	0	0	2
2:30 PM	14	0	0	0	0	4	0	4
2:45 PM	1	0	0	0	0	0	4	0
3:00 PM	0	2	0	0	0	0	0	0
3:15 PM	0	1	0	0	0	0	1	1
3:30 PM	0	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	1	0	1	1	0	0	3	0
4:15 PM	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	1	0	0	0	0
5:00 PM	1	0	0	0	0	0	4	0
5:15 PM	0	0	0	0	0	1	0	0
5:30 PM	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	1	0
TOTALS	**17**	**3**	**1**	**3**	**0**	**5**	**13**	**11**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-007

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Mentz St			Mentz St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	0	0	0	1
APPROACH %'s :				0.00%	100.00%	0.00%							
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	0	0	1
PEAK HR FACTOR :		0.000			0.250			0.000			0.000		0.250

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-007

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Mentz St			Mentz St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
3:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	2
3:15 PM	0	4	0	0	0	0	0	0	0	1	0	0	5
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
5:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	11	0	0	1	0	0	0	0	3	0	0	15
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%				100.00%	0.00%	0.00%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	4	0	0	0	0	0	0	0	0	0	0	4
PEAK HR FACTOR :		0.333			0.000			0.000			0.000		0.333

CONTROL : 4-Way Stop

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Del Valle Ave and Sierra Vista Ct , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-008

City: La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	215 PM

Total Peak Hour Summary

Southbound Approach (Del Valle Ave)

Lanes	0	1	0		
AM	133	204	0	211	AM
NOON	0	0	0	0	NOON
PM	79	109	0	151	PM

Eastbound Approach (Sierra Vista Ct)

	AM	NOON	PM
	174	0	102
0	91	0	53
1	0	0	0
0	48	0	33
Lanes	AM	NOON	PM

Westbound Approach

AM	NOON	PM	Lanes
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	
AM	NOON	PM	

Northbound Approach

AM	252	41	120	0	AM
NOON	0	0	0	0	NOON
PM	142	23	98	0	PM
		0	1	0	Lanes

CONTROL

1-Way Stop (EB)

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	North Leg		
	337	211	AM
	0	0	NOON
	188	151	PM

West Leg	AM	NOON	PM
	174	0	102
	139	0	86

East Leg	AM	NOON	PM
	0	0	0
	0	0	0

	South Leg	
AM	252	161
NOON	0	0
PM	142	121

Total Volume Per Leg

	North Leg
AM	548
NOON	0
PM	339

West Leg	AM	NOON	PM
	313	0	188

East Leg	AM	NOON	PM
	0	0	0

	South Leg
AM	413
NOON	0
PM	263

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-008

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
7:00 AM	4	15	0	0	32	9	9	0	7	0	0	0	76
7:15 AM	8	20	0	0	30	33	20	0	12	0	0	0	123
7:30 AM	23	29	0	0	54	54	43	0	20	0	0	0	223
7:45 AM	7	42	0	0	65	27	24	0	13	0	0	0	178
8:00 AM	3	29	0	0	55	19	4	0	3	0	0	0	113
8:15 AM	0	20	0	0	20	3	4	0	7	0	0	0	54
8:30 AM	1	8	0	0	18	2	5	0	1	0	0	0	35
8:45 AM	4	18	0	0	31	3	6	0	2	0	0	0	64
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	50	181	0	0	305	150	115	0	65	0	0	0	866
APPROACH %'s :	21.65%	78.35%	0.00%	0.00%	67.03%	32.97%	63.89%	0.00%	36.11%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	41	120	0	0	204	133	91	0	48	0	0	0	637
PEAK HR FACTOR :		0.774			0.780			0.552			0.000		0.714

CONTROL : 1-Way Stop (EB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-008

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
2:00 PM	3	27	0	0	23	6	5	0	4	0	0	0	68
2:15 PM	5	22	0	0	24	23	11	0	2	0	0	0	87
2:30 PM	7	25	0	0	38	33	13	0	14	0	0	0	130
2:45 PM	5	24	0	0	23	14	18	0	10	0	0	0	94
3:00 PM	6	27	0	0	24	9	11	0	7	0	0	0	84
3:15 PM	6	31	0	0	28	8	7	0	5	0	0	0	85
3:30 PM	1	16	0	1	24	10	11	0	2	0	0	0	65
3:45 PM	5	41	0	0	23	7	13	0	7	0	0	0	96
4:00 PM	3	24	0	0	27	8	6	0	5	0	0	0	73
4:15 PM	4	26	0	0	25	7	8	0	4	0	0	0	74
4:30 PM	6	27	0	0	22	5	10	0	3	0	0	0	73
4:45 PM	5	38	0	0	26	13	9	0	3	0	0	0	94
5:00 PM	4	32	0	0	22	10	17	0	2	0	0	0	87
5:15 PM	4	36	0	0	17	9	12	0	3	0	0	0	81
5:30 PM	5	48	0	0	31	15	16	0	3	0	0	0	118
5:45 PM	3	31	0	0	31	12	8	0	5	0	0	0	90
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	72	475	0	1	408	189	175	0	79	0	0	0	1399
APPROACH %'s :	13.16%	86.84%	0.00%	0.17%	68.23%	31.61%	68.90%	0.00%	31.10%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	215 PM												TOTAL
PEAK HR VOL :	23	98	0	0	109	79	53	0	33	0	0	0	395
PEAK HR FACTOR :		0.917			0.662			0.768			0.000		0.760

CONTROL : 1-Way Stop (EB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-008

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
7:00 AM	4	15	0	0	32	9	9	0	7	0	0	0	76
7:15 AM	8	20	0	0	30	33	20	0	12	0	0	0	123
7:30 AM	23	29	0	0	54	54	43	0	20	0	0	0	223
7:45 AM	7	42	0	0	65	27	24	0	13	0	0	0	178
8:00 AM	3	29	0	0	55	19	4	0	3	0	0	0	113
8:15 AM	0	20	0	0	20	3	4	0	7	0	0	0	54
8:30 AM	1	8	0	0	18	2	5	0	1	0	0	0	35
8:45 AM	4	18	0	0	31	3	6	0	2	0	0	0	64
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	50	181	0	0	305	150	115	0	65	0	0	0	866
APPROACH %'s :	21.65%	78.35%	0.00%	0.00%	67.03%	32.97%	63.89%	0.00%	36.11%				
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	41	120	0	0	204	133	91	0	48	0	0	0	637
PEAK HR FACTOR :		0.774			0.780			0.552			0.000		0.714

CONTROL : 1-Way Stop (EB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-008

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
2:00 PM	3	27	0	0	23	6	5	0	4	0	0	0	68
2:15 PM	5	22	0	0	24	23	11	0	2	0	0	0	87
2:30 PM	7	25	0	0	38	33	13	0	14	0	0	0	130
2:45 PM	5	24	0	0	23	14	18	0	10	0	0	0	94
3:00 PM	6	27	0	0	24	9	11	0	7	0	0	0	84
3:15 PM	6	31	0	0	28	8	7	0	5	0	0	0	85
3:30 PM	1	16	0	1	24	10	11	0	2	0	0	0	65
3:45 PM	5	41	0	0	23	7	13	0	7	0	0	0	96
4:00 PM	3	24	0	0	27	8	6	0	5	0	0	0	73
4:15 PM	4	26	0	0	25	7	8	0	4	0	0	0	74
4:30 PM	6	27	0	0	22	5	10	0	3	0	0	0	73
4:45 PM	5	38	0	0	26	13	9	0	3	0	0	0	94
5:00 PM	4	32	0	0	22	10	17	0	2	0	0	0	87
5:15 PM	4	36	0	0	17	9	12	0	3	0	0	0	81
5:30 PM	5	48	0	0	31	15	16	0	3	0	0	0	118
5:45 PM	3	31	0	0	31	12	8	0	5	0	0	0	90
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	72	475	0	1	408	189	175	0	79	0	0	0	1399
APPROACH %'s :	13.16%	86.84%	0.00%	0.17%	68.23%	31.61%	68.90%	0.00%	31.10%				
PEAK HR START TIME :	215 PM												TOTAL
PEAK HR VOL :	23	98	0	0	109	79	53	0	33	0	0	0	395
PEAK HR FACTOR :		0.917			0.662			0.768			0.000		0.760

CONTROL : 1-Way Stop (EB)

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-008
N/S Street: Del Valle Ave
E/W Street: Sierra Vista Ct
DATE: 11/3/2015 DAY: Tuesday
CITY: La Puente

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	1	0	0	7	0
7:15 AM	0	0	0	1	0	0	0	3
7:30 AM	0	1	0	0	0	0	8	1
7:45 AM	0	0	0	0	0	0	4	3
8:00 AM	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	3	0
8:45 AM	0	0	0	0	0	0	2	0
TOTALS	**0**	**1**	**0**	**2**	**0**	**0**	**24**	**10**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	3	0
7:45 AM	0	0	0	0	0	0	3	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	3
2:15 PM	0	0	0	0	0	0	0	2
2:30 PM	0	0	0	0	0	0	1	3
2:45 PM	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	1	1
3:15 PM	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	1	1
4:45 PM	2	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1
5:30 PM	0	0	2	0	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**2**	**0**	**2**	**0**	**0**	**0**	**4**	**17**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	2
2:15 PM	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	4
2:45 PM	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-008

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	0	0	0	1
APPROACH %'s :				0.00%	100.00%	0.00%							
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :		0.000			0.000			0.000			0.000		0.000

CONTROL : 1-Way Stop (EB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-008

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Sierra Vista Ct			Sierra Vista Ct			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	0	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
2:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:15 PM	0	1	0	0	0	1	0	0	0	0	0	0	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	1	0	0	0	0	0	1	0	0	0	0	0	2
5:45 PM	0	1	0	0	0	0	2	0	0	0	0	0	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	5	0	0	1	1	4	0	0	0	0	0	13
APPROACH %'s :	28.57%	71.43%	0.00%	0.00%	50.00%	50.00%	100.00%	0.00%	0.00%				

PEAK HR START TIME :	215 PM												TOTAL
PEAK HR VOL :	1	2	0	0	1	0	0	0	0	0	0	0	4
PEAK HR FACTOR :		0.750			0.250			0.000			0.000		1.000

CONTROL : 1-Way Stop (EB)

ITM Peak Hour Summary

Prepared by:

National Data & Surveying Services

Del Valle Ave and Temple Ave , La Puente

Date: 11/3/2015

Day: Tuesday

Project #: 15-5721-009

City: La Puente

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach (Del Valle Ave)

Lanes	0	1	0		
AM	136	23	122	164	AM
NOON	0	0	0	0	NOON
PM	63	15	43	188	PM

Eastbound Approach (Temple Ave)

Lanes	AM	NOON	PM
	1223	0	627
1	52	0	111
2	540	0	1250
0	4	0	11

Westbound Approach

Lanes	AM	NOON	PM
0	88	0	62
2	1082	0	561
1	31	0	15
	698	0	1320

Northbound Approach

AM	58	5	24	36	AM
NOON	0	0	0	0	NOON
PM	41	3	15	27	PM
		0	1	0	Lanes

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	9:00 AM
NOON	NONE	NONE
PM	2:00 PM	6:00 PM

Total Ins & Outs

	AM	NOON	PM
North Leg	281	0	121
	164	0	188
West Leg	1223	0	627
	596	0	1372
East Leg	1201	0	638
	698	0	1320
South Leg	58	0	41
	65	0	45

Total Volume Per Leg

	AM	NOON	PM
North Leg	445	0	309
West Leg	1819	0	1999
East Leg	1899	0	1958
South Leg	123	0	86

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-009

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
7:00 AM	2	0	6	15	3	32	15	70	0	2	268	5	418
7:15 AM	2	5	5	17	3	25	11	127	0	6	299	14	514
7:30 AM	0	9	13	42	8	34	11	146	2	6	280	30	581
7:45 AM	2	8	11	37	8	37	20	150	0	9	260	27	569
8:00 AM	1	2	7	26	4	40	10	117	2	10	243	17	479
8:15 AM	1	4	2	9	1	22	7	83	0	2	153	8	292
8:30 AM	0	1	6	9	3	11	8	83	2	1	172	2	298
8:45 AM	1	4	3	9	3	24	15	101	2	2	167	7	338
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	33	53	164	33	225	97	877	8	38	1842	110	3489
APPROACH %'s :	9.47%	34.74%	55.79%	38.86%	7.82%	53.32%	9.88%	89.31%	0.81%	1.91%	92.56%	5.53%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	5	24	36	122	23	136	52	540	4	31	1082	88	2143
PEAK HR FACTOR :		0.739			0.836			0.876			0.941		0.922

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-009

Day: Tuesday

TOTALS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
2:00 PM	1	1	4	8	2	17	15	113	1	4	101	12	279
2:15 PM	0	5	5	10	4	18	18	138	7	8	125	8	346
2:30 PM	0	4	4	16	6	23	20	166	3	4	135	17	398
2:45 PM	1	5	3	14	3	20	12	159	1	4	122	13	357
3:00 PM	2	5	5	16	5	13	16	206	3	6	140	20	437
3:15 PM	1	3	6	14	4	19	16	212	2	5	167	18	467
3:30 PM	2	1	5	14	1	15	14	204	4	2	118	6	386
3:45 PM	1	6	3	13	1	18	28	212	0	5	107	18	412
4:00 PM	0	0	9	10	6	12	20	211	4	5	120	11	408
4:15 PM	0	0	13	7	4	18	18	237	1	2	138	15	453
4:30 PM	0	8	5	7	6	8	17	248	2	5	123	14	443
4:45 PM	0	4	7	11	7	11	23	298	2	4	117	15	499
5:00 PM	1	2	10	8	3	13	31	322	0	3	123	14	530
5:15 PM	0	5	6	5	3	15	20	303	4	5	124	15	505
5:30 PM	1	4	7	14	5	13	39	304	6	4	145	17	559
5:45 PM	1	4	4	16	4	22	21	321	1	3	169	16	582
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	57	96	183	64	255	328	3654	41	69	2074	229	7061
APPROACH %'s :	6.71%	34.76%	58.54%	36.45%	12.75%	50.80%	8.15%	90.83%	1.02%	2.91%	87.44%	9.65%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	15	27	43	15	63	111	1250	11	15	561	62	2176
PEAK HR FACTOR :		0.865			0.720			0.972			0.848		0.935

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-009

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
7:00 AM	2	0	6	15	3	32	15	70	0	2	268	5	418
7:15 AM	2	5	5	17	3	25	11	127	0	6	299	14	514
7:30 AM	0	9	13	42	8	34	11	146	2	6	280	30	581
7:45 AM	2	8	11	37	8	37	20	150	0	9	260	27	569
8:00 AM	1	2	7	26	4	40	10	117	2	10	243	17	479
8:15 AM	1	4	2	9	1	22	7	83	0	2	153	8	292
8:30 AM	0	1	6	9	3	11	8	83	2	1	172	2	298
8:45 AM	1	4	3	9	3	24	15	101	2	2	167	7	338
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	33	53	164	33	225	97	877	8	38	1842	110	3489
APPROACH %'s :	9.47%	34.74%	55.79%	38.86%	7.82%	53.32%	9.88%	89.31%	0.81%	1.91%	92.56%	5.53%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	5	24	36	122	23	136	52	540	4	31	1082	88	2143
PEAK HR FACTOR :		0.739			0.836			0.876			0.941		0.922

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-009

Day: Tuesday

CARS

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
2:00 PM	1	1	4	8	2	17	15	113	1	4	101	12	279
2:15 PM	0	5	5	10	4	18	18	138	7	8	125	8	346
2:30 PM	0	4	4	16	6	23	20	166	3	4	135	17	398
2:45 PM	1	5	3	14	3	20	12	159	1	4	122	13	357
3:00 PM	2	5	5	16	5	13	16	206	3	6	140	20	437
3:15 PM	1	3	6	14	4	19	16	212	2	5	167	18	467
3:30 PM	2	1	5	14	1	15	14	204	4	2	118	6	386
3:45 PM	1	6	3	13	1	18	28	212	0	5	107	18	412
4:00 PM	0	0	9	10	6	12	20	211	4	5	120	11	408
4:15 PM	0	0	13	7	4	18	18	237	1	2	138	15	453
4:30 PM	0	8	5	7	6	8	17	248	2	5	123	14	443
4:45 PM	0	4	7	11	7	11	23	298	2	4	117	15	499
5:00 PM	1	2	10	8	3	13	31	322	0	3	123	14	530
5:15 PM	0	5	6	5	3	15	20	303	4	5	124	15	505
5:30 PM	1	4	7	14	5	13	39	304	6	4	145	17	559
5:45 PM	1	4	4	16	4	22	21	321	1	3	169	16	582
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	57	96	183	64	255	328	3654	41	69	2074	229	7061
APPROACH %'s :	6.71%	34.76%	58.54%	36.45%	12.75%	50.80%	8.15%	90.83%	1.02%	2.91%	87.44%	9.65%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	15	27	43	15	63	111	1250	11	15	561	62	2176
PEAK HR FACTOR :		0.865			0.720			0.972			0.848		0.935

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5721-009
N/S Street: Del Valle Ave
E/W Street: Temple Ave
DATE: 11/3/2015
CITY: La Puente

DAY: Tuesday

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	2	0	0	0	2
7:15 AM	1	1	2	1	0	0	0	1
7:30 AM	0	0	0	0	0	0	3	0
7:45 AM	1	0	0	0	1	1	1	1
8:00 AM	0	0	3	2	0	0	0	1
8:15 AM	0	0	1	0	0	0	0	0
8:30 AM	0	0	1	3	0	2	1	0
8:45 AM	1	0	6	3	0	0	1	2
TOTALS	**3**	**1**	**14**	**11**	**1**	**3**	**6**	**7**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0
TOTALS	**0**	**1**	**2**	**1**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	0	2	1	0	0	1	0
2:30 PM	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	2	0	0	0	2
3:00 PM	0	1	0	0	0	0	0	0
3:15 PM	0	7	2	2	1	2	0	0
3:30 PM	0	0	2	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	1	2	0	0	0	0
4:15 PM	0	0	1	9	0	0	0	0
4:30 PM	0	0	1	5	0	0	1	0
4:45 PM	0	0	1	0	0	0	0	0
5:00 PM	0	0	1	0	1	0	0	0
5:15 PM	0	0	1	0	0	4	0	0
5:30 PM	0	0	4	2	0	2	0	0
5:45 PM	0	0	2	0	1	1	0	0
TOTALS	**0**	**8**	**18**	**23**	**3**	**9**	**2**	**3**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
2:00 PM	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	6	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-009

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

AM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	0	2	3	0	6
APPROACH %'s :				0.00%	100.00%	0.00%				40.00%	60.00%	0.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	1	2	0	4
PEAK HR FACTOR :		0.000			0.250			0.000			0.375		0.500

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5721-009

Day: Tuesday

BIKES

City: La Puente

Date: 11/3/2015

PM

NS/EW Streets:	Del Valle Ave			Del Valle Ave			Temple Ave			Temple Ave			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	2	0	1	2	0	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1
5:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2	0	0	1	0	1	1	1	0	2	1	9
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	33.33%	33.33%	33.33%	0.00%	66.67%	33.33%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	2	0	0	0	0	1	0	0	0	0	1	4
PEAK HR FACTOR :	0.250			0.000			0.250			0.250			0.500

CONTROL : Signalized

APPENDIX E

CMP 2010 Growth Rate
FACT SHEET

Exhibit D-1

GENERAL TRAFFIC VOLUME GROWTH FACTORS

RSA	Representative City/Place	2010	2015	2020	2025	2030	2035
7	Agoura Hills	1.000	1.020	1.041	1.052	1.063	1.075
8	Santa Clarita	1.000	1.145	1.291	1.348	1.405	1.461
9	Lancaster	1.000	1.214	1.427	1.676	1.924	2.172
10	Palmdale	1.000	1.134	1.267	1.363	1.458	1.553
11	Angeles Forest	1.000	1.151	1.301	1.394	1.487	1.580
12	West S.F. Valley	1.000	1.027	1.054	1.068	1.083	1.097
13	Burbank	1.000	1.024	1.049	1.063	1.077	1.092
14	Sylmar	1.000	1.024	1.049	1.071	1.093	1.114
15	Malibu	1.000	1.027	1.054	1.075	1.096	1.117
16	Santa Monica	1.000	1.014	1.028	1.038	1.049	1.059
17	West/Central L.A.	1.000	1.007	1.014	1.024	1.034	1.044
18	South Bay/LAX	1.000	1.013	1.026	1.035	1.044	1.053
19	Palos Verdes	1.000	1.025	1.051	1.061	1.071	1.081
20	Long Beach	1.000	1.076	1.152	1.160	1.168	1.177
21	Vernon	1.000	1.073	1.146	1.158	1.170	1.182
22	Downey	1.000	1.052	1.104	1.116	1.127	1.139
23	Downtown L.A.	1.000	1.009	1.018	1.030	1.042	1.054
24	Glendale	1.000	1.014	1.027	1.041	1.055	1.068
25	Pasadena	1.000	1.041	1.082	1.098	1.115	1.131
26	West Covina	1.000	1.023	1.046	1.066	1.086	1.106
27	Pomona	1.000	1.081	1.161	1.190	1.219	1.248

APPENDIX F

RELATED PROJECT TRIP GENERATION

RELATED PROJECT
ITE TRIP GENERATION RATES

747 Del Valle - La Puente

#	Project	Size		Location	City	Daily Traffic	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hours In	PM Peak Hours Out	PM Peak Hours Total
1	Grocery Store	18,055	sf	1545 Hacienda Bl	La Puente	1,846	38	23	61	87	84	171
2	Single Family Homes	5	units	N Side Sierra Vista west of 5th Street	La Puente	48	1	3	4	3	2	5
3	Single Family Homes	5	units	1068 Larimore	La Puente	48	48	48	48	48	48	48
4	Industrial Building	125,344	sf	15000 Nelson	West Covina	874	101	14	115	15	107	122
5	2 Industrial Buildings	130,170	sf	489&499 Parriott Pl	Industry	907	105	14	120	15	111	126
6	5 Industrial Buildings	614,597	sf	SEC Azusa & Chestnut	Industry	4,284	498	68	565	101	495	596
7	Addition to existing Industrial Building	8,850	sf	18421 Railroad Av	Industry	62	7	1	8	1	8	9
8	Office Building	77,250	sf	12851 Crossroads Pkwy S	Industry	852	72	48	121	20	96	115
9	Warehouse & Office	36,666	sf	3718 Capitol Avenue	Industry	131	9	2	11	6	19	25
10	Replace Auto Center w/ Retail w drive thru	20,621	sf	1552 Azusa Av	West Covina	1,998	37	34	71	102	102	204
11	Rail Maintenance Bldg	6,760	sf	17225 Arenth Av	La Puente	24	2	0	2	2	5	7
12	Fast Food Restaurant	2,492	sf	Castleton	La Puente	1,784	66	44	109	33	32	65
13	2nd Unit	1	unit	16138 Balckwood St	Unincorporated County	10	0	1	1	1	0	1
14	2nd Unit	1	unit	1300 Larimore Av	Unincorporated County	10	0	1	1	1	0	1
15	2nd Unit	1	unit	403 Coberta Avenue	Unincorporated County	10	0	1	1	1	0	1
16	TI Existing Retail	2,825	sf	907 N Sunset Av	Unincorporated County	274	5	5	10	14	14	28
17	Restaurant*	2,000	sf	13009 Valley Bl	Unincorporated County	1,432	53	35	88	27	26	52
18	2nd Unit	1	unit	527 Giano Av	Unincorporated County	10	0	1	1	1	0	1
19	Single Family Homes	6	units	1126 Willow Ave	Unincorporated County	57	2	3	5	4	2	6
20	Single Family Homes	1	unit	14128 Fairgrove Av	Unincorporated County	10	0	1	1	1	0	1
21	Add unit SFH	1	unit	515 Giano	Unincorporated County	10	0	1	1	1	0	1
22	Add unit SFH	1	unit	18509 Hurley St	Unincorporated County	10	0	1	1	1	0	1
23	Duplex	2	units	1132 N Siesta Av	La Puente	19	0	2	2	1	1	2
24	2nd Unit	1	unit	16122 Meadowside St	Unincorporated County	10	0	1	1	1	0	1
25	2nd Unit	1	unit	421 S Orange Blossom Av	Unincorporated County	10	0	1	1	1	0	1
26	Gas Station w minimart*	10	fp	908 N Sunset Av	Unincorporated County	1,628	51	51	102	68	67	135
27	2nd Unit	1	unit	15932 Hayland St	La Puente	10	0	1	1	1	0	1
28	convert Garage Bay* to MiniMart & Store	1,000	sf	1030 S Hacienda Bl	La Puente	738	16	16	31	17	18	35
29	Temple*	10,000	sf	710 Grand View Lane	Unincorporated County	106	1	0	1	8	9	17
30	Warehouse to Food Processing*	100,000	sf	507 Coralridge Pl	Unincorporated County	349	40	6	46	6	43	49
31	Warehouse*	100,000	sf	18249 Valley Bl	Unincorporated County	356	24	6	30	8	24	32

* estimated square footage as data was not available

APPENDIX G

BIKEWAY NETWORK MAP

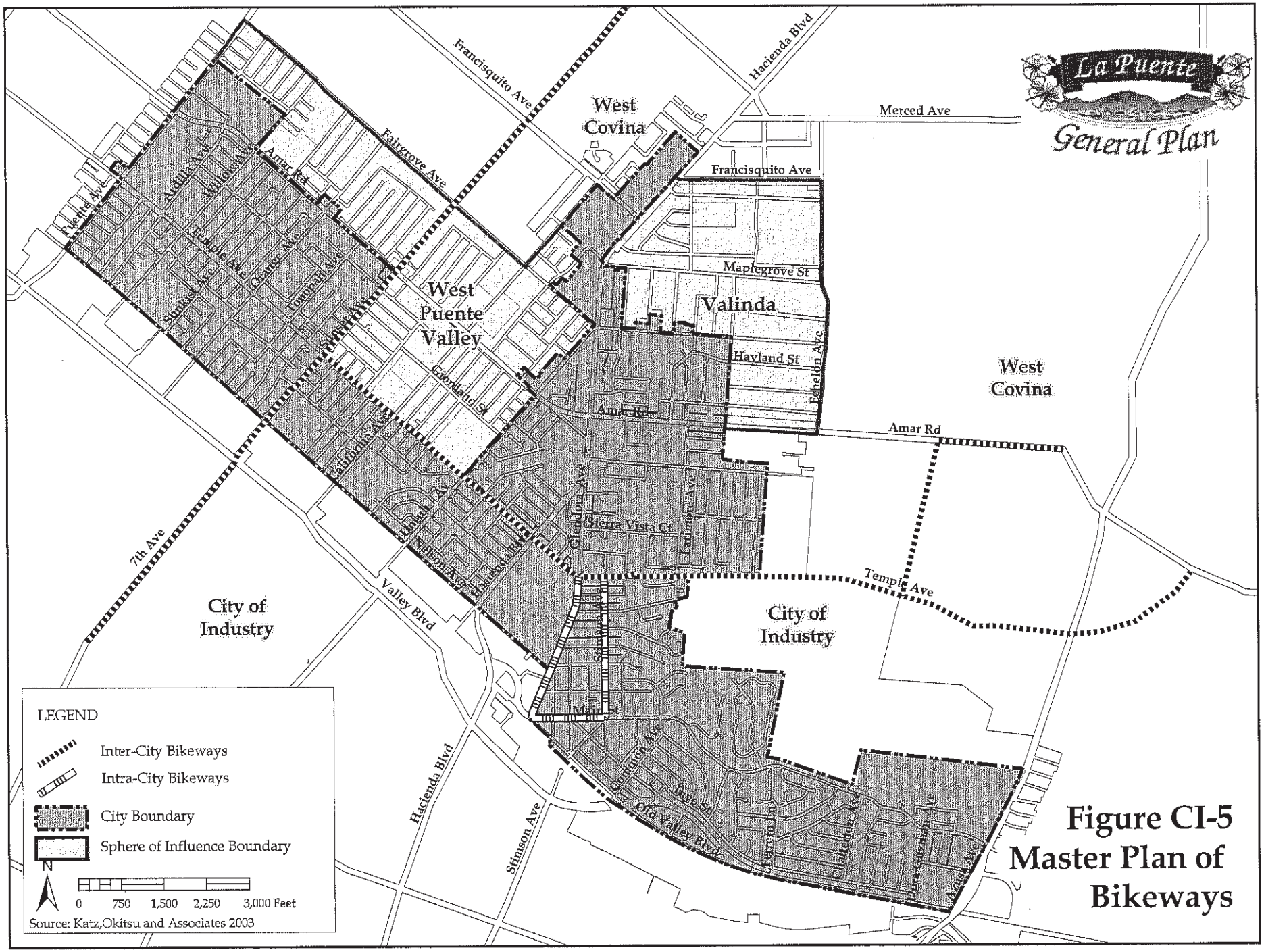


Figure CI-5
Master Plan of Bikeways

APPENDIX H

LEVEL OF SERVICE WORKSHEETS

EXISTING (November 2015)
TRAFFIC CONDITIONS

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/5/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	31	55	1173	38	52	1116
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.83	0.83	0.86	0.86	0.89	0.89
Hourly flow rate (vph)	37	66	1364	44	58	1254
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2140	714			1424	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2140	714			1424	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	82			87	
cM capacity (veh/h)	36	364			467	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	104	682	682	44	58	627	627
Volume Left	37	0	0	0	58	0	0
Volume Right	66	0	0	44	0	0	0
cSH	84	1700	1700	1700	467	1700	1700
Volume to Capacity	1.23	0.40	0.40	0.03	0.13	0.37	0.37
Queue Length 95th (ft)	189	0	0	0	11	0	0
Control Delay (s)	261.4	0.0	0.0	0.0	13.8	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	261.4	0.0			0.6		
Approach LOS	F						

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: GLENDORA AV & SIERRA VISTA

7/5/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	45	100	420	28	51	317
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.66	0.66	0.90	0.90	0.81	0.81
Hourly flow rate (vph)	68	152	467	31	63	391
Pedestrians	3		3			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	794	239			501	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	794	239			501	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	78	80			94	
cM capacity (veh/h)	304	758			1057	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	220	233	233	31	193	261
Volume Left	68	0	0	0	63	0
Volume Right	152	0	0	31	0	0
cSH	518	1700	1700	1700	1057	1700
Volume to Capacity	0.42	0.14	0.14	0.02	0.06	0.15
Queue Length 95th (ft)	52	0	0	0	5	0
Control Delay (s)	17.0	0.0	0.0	0.0	3.2	0.0
Lane LOS	C				A	
Approach Delay (s)	17.0	0.0			1.4	
Approach LOS	C					

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	82	6	20	76	0	11	0	72	69	49	47
Peak Hour Factor	0.64	0.64	0.64	0.73	0.73	0.73	0.47	0.47	0.47	0.47	0.47	0.47
Hourly flow rate (vph)	2	128	9	27	104	0	23	0	153	147	104	100

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	139	132	177	199	152
Volume Left (vph)	2	27	23	147	0
Volume Right (vph)	9	0	153	0	100
Hadj (s)	0.00	0.08	-0.46	0.40	-0.43
Departure Headway (s)	5.4	5.5	4.8	5.9	5.0
Degree Utilization, x	0.21	0.20	0.23	0.32	0.21
Capacity (veh/h)	609	598	702	587	683
Control Delay (s)	9.8	9.8	9.2	10.4	8.2
Approach Delay (s)	9.8	9.8	9.2	9.4	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	9.5		
Level of Service	A		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	562	3	8	1206	4	1	2	12	12	3	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.94	0.94	0.94	0.54	0.54	0.54	0.61	0.61	0.61
Hourly flow rate (vph)	27	677	4	9	1283	4	2	4	22	20	5	59
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	1294			688			1464	2048	353	1730	2048	655
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1294			688			1464	2048	353	1730	2048	655
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			97	93	97	59	90	85
cM capacity (veh/h)	528			897			66	51	636	48	51	404

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	252	451	4	436	855	4	28	84
Volume Left	27	0	0	9	0	0	2	20
Volume Right	0	0	4	0	0	4	22	59
cSH	528	1700	1700	897	1700	1700	206	129
Volume to Capacity	0.05	0.27	0.00	0.01	0.50	0.00	0.14	0.65
Queue Length 95th (ft)	4	0	0	1	0	0	11	86
Control Delay (s)	1.9	0.0	0.0	0.3	0.0	0.0	25.2	73.9
Lane LOS	A			A			D	F
Approach Delay (s)	0.7			0.1			25.2	73.9
Approach LOS							D	F

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
5: DEL VALLE AV & AMAR RD

7/5/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	742	118	132	1364	180	123
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.95	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	2980	1294	1490	2980	1433	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	2980	1294	1490	2980	1433	
Peak-hour factor, PHF	0.82	0.82	0.95	0.95	0.82	0.82
Adj. Flow (vph)	905	144	139	1436	220	150
RTOR Reduction (vph)	0	87	0	0	41	0
Lane Group Flow (vph)	905	57	139	1436	329	0
Confl. Peds. (#/hr)		3	3		35	
Confl. Bikes (#/hr)		4				1
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	23.7	23.7	6.4	34.1	17.9	
Effective Green, g (s)	23.7	23.7	6.4	34.1	17.9	
Actuated g/C Ratio	0.39	0.39	0.11	0.57	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1177	511	158	1693	427	
v/s Ratio Prot	0.30		0.09	c0.48	c0.23	
v/s Ratio Perm		0.04				
v/c Ratio	0.77	0.11	0.88	0.85	0.77	
Uniform Delay, d1	15.8	11.5	26.4	10.8	19.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.1	38.5	4.2	12.7	
Delay (s)	18.9	11.6	65.0	15.0	31.8	
Level of Service	B	B	E	B	C	
Approach Delay (s)	17.9			19.4	31.8	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	26	57	42	26	126	24	149	10	51	213	19
Peak Hour Factor	0.65	0.65	0.65	0.72	0.72	0.72	0.88	0.88	0.88	0.70	0.70	0.70
Hourly flow rate (vph)	28	40	88	58	36	175	27	169	11	73	304	27

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	155	269	208	404
Volume Left (vph)	28	58	27	73
Volume Right (vph)	88	175	11	27
Hadj (s)	-0.27	-0.31	0.03	0.03
Departure Headway (s)	6.0	5.7	5.9	5.6
Degree Utilization, x	0.26	0.42	0.34	0.63
Capacity (veh/h)	515	574	543	613
Control Delay (s)	11.0	12.8	12.0	17.4
Approach Delay (s)	11.0	12.8	12.0	17.4
Approach LOS	B	B	B	C

Intersection Summary			
Delay	14.2		
Level of Service	B		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	0	5	57	0	20	0	193	23	50	270	0
Peak Hour Factor	0.25	0.25	0.25	0.74	0.74	0.74	0.72	0.72	0.72	0.75	0.75	0.75
Hourly flow rate (vph)	12	0	20	77	0	27	0	268	32	67	360	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	32	104	300	427
Volume Left (vph)	12	77	0	67
Volume Right (vph)	20	27	32	0
Hadj (s)	-0.27	0.03	-0.03	0.07
Departure Headway (s)	5.6	5.7	4.8	4.7
Degree Utilization, x	0.05	0.17	0.40	0.56
Capacity (veh/h)	545	556	722	737
Control Delay (s)	8.9	9.8	11.0	13.7
Approach Delay (s)	8.9	9.8	11.0	13.7
Approach LOS	A	A	B	B

Intersection Summary			
Delay	12.1		
Level of Service	B		
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/5/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	91	48	41	120	204	133
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.55	0.55	0.77	1.00	0.78	0.78
Hourly flow rate (vph)	165	87	53	120	262	171
Pedestrians	2			26	26	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			2	2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	601	375	434			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	601	375	434			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	62	87	95			
cM capacity (veh/h)	431	656	1124			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	253	173	432
Volume Left	165	53	0
Volume Right	87	0	171
cSH	489	1124	1700
Volume to Capacity	0.52	0.05	0.25
Queue Length 95th (ft)	73	4	0
Control Delay (s)	20.0	2.9	0.0
Lane LOS	C	A	
Approach Delay (s)	20.0	2.9	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	52	540	4	31	1082	88	5	24	36	122	23	136
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1489	2976		1484	2940			1433			1420	
Flt Permitted	0.16	1.00		0.39	1.00			0.97			0.82	
Satd. Flow (perm)	256	2976		608	2940			1398			1197	
Peak-hour factor, PHF	0.88	0.88	0.88	0.94	0.94	0.94	0.74	0.74	0.74	0.84	0.84	0.84
Adj. Flow (vph)	59	614	5	33	1151	94	7	32	49	145	27	162
RTOR Reduction (vph)	0	1	0	0	12	0	0	32	0	0	32	0
Lane Group Flow (vph)	59	618	0	33	1233	0	0	56	0	0	302	0
Confl. Peds. (#/hr)	4		7	7		4	8		2	2		8
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.5	24.5		24.5	24.5			17.5			17.5	
Effective Green, g (s)	24.5	24.5		24.5	24.5			17.5			17.5	
Actuated g/C Ratio	0.49	0.49		0.49	0.49			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	125	1458		297	1440			489			418	
v/s Ratio Prot		0.21			c0.42							
v/s Ratio Perm	0.23			0.05				0.04			c0.25	
v/c Ratio	0.47	0.42		0.11	0.86			0.11			0.72	
Uniform Delay, d1	8.5	8.2		6.9	11.2			11.0			14.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.8	0.2		0.2	5.2			0.5			10.4	
Delay (s)	11.3	8.4		7.0	16.4			11.5			24.5	
Level of Service	B	A		A	B			B			C	
Approach Delay (s)		8.7			16.2			11.5			24.5	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	51	10	16	50	0	6	0	33	24	23	17
Peak Hour Factor	0.59	0.59	0.59	0.57	0.57	0.57	0.70	0.70	0.70	0.59	0.59	0.59
Hourly flow rate (vph)	0	86	17	28	88	0	9	0	47	41	39	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	103	116	56	60	48
Volume Left (vph)	0	28	9	41	0
Volume Right (vph)	17	0	47	0	29
Hadj (s)	-0.06	0.08	-0.44	0.37	-0.38
Departure Headway (s)	4.4	4.5	4.2	5.4	4.7
Degree Utilization, x	0.13	0.14	0.07	0.09	0.06
Capacity (veh/h)	790	761	802	629	730
Control Delay (s)	8.0	8.2	7.5	7.8	6.8
Approach Delay (s)	8.0	8.2	7.5	7.3	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	812	3	3	631	8	1	1	7	6	0	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.80	0.80	0.80	0.56	0.56	0.56	0.78	0.78	0.78
Hourly flow rate (vph)	20	837	3	4	789	10	2	2	12	8	0	33
Pedestrians		10			10			6			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	809			846			1327	1699	435	1287	1692	414
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	809			846			1327	1699	435	1287	1692	414
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			98	98	98	93	100	94
cM capacity (veh/h)	806			783			102	88	562	111	88	577

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	299	558	3	267	526	10	16	41
Volume Left	20	0	0	4	0	0	2	8
Volume Right	0	0	3	0	0	10	12	33
cSH	806	1700	1700	783	1700	1700	267	323
Volume to Capacity	0.02	0.33	0.00	0.00	0.31	0.01	0.06	0.13
Queue Length 95th (ft)	2	0	0	0	0	0	5	11
Control Delay (s)	0.9	0.0	0.0	0.2	0.0	0.0	19.3	17.8
Lane LOS	A			A			C	C
Approach Delay (s)	0.3			0.1			19.3	17.8
Approach LOS							C	C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1157	89	113	856	99	151
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.90	1.00	1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1202	1490	2980	1361	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1202	1490	2980	1361	
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.84	0.84
Adj. Flow (vph)	1218	94	120	911	118	180
RTOR Reduction (vph)	0	53	0	0	92	0
Lane Group Flow (vph)	1218	41	120	911	206	0
Confl. Peds. (#/hr)		41	41		41	41
Confl. Bikes (#/hr)		4				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	520	124	1738	385	
v/s Ratio Prot	c0.41		c0.08	0.31	c0.15	
v/s Ratio Perm		0.03				
v/c Ratio	0.94	0.08	0.97	0.52	0.54	
Uniform Delay, d1	16.3	10.0	27.4	7.5	18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.7	0.1	70.0	0.3	5.3	
Delay (s)	30.0	10.0	97.4	7.8	23.4	
Level of Service	C	B	F	A	C	
Approach Delay (s)	28.5			18.2	23.4	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	30	38	17	9	66	24	127	12	69	128	27
Peak Hour Factor	0.76	0.76	0.76	0.77	0.77	0.77	0.80	0.80	0.80	0.90	0.90	0.90
Hourly flow rate (vph)	46	39	50	22	12	86	30	159	15	77	142	30

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	136	119	204	249
Volume Left (vph)	46	22	30	77
Volume Right (vph)	50	86	15	30
Hadj (s)	-0.12	-0.36	0.02	0.02
Departure Headway (s)	5.1	4.9	4.9	4.9
Degree Utilization, x	0.19	0.16	0.28	0.34
Capacity (veh/h)	640	660	690	698
Control Delay (s)	9.3	8.8	9.8	10.3
Approach Delay (s)	9.3	8.8	9.8	10.3
Approach LOS	A	A	A	B

Intersection Summary			
Delay	9.7		
Level of Service	A		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	0	22	0	12	0	132	14	35	166	1
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.79	0.79	0.79	0.76	0.76	0.76
Hourly flow rate (vph)	4	0	0	28	0	15	0	167	18	46	218	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	43	185	266
Volume Left (vph)	4	28	0	46
Volume Right (vph)	0	15	18	1
Hadj (s)	0.23	-0.05	-0.02	0.07
Departure Headway (s)	5.2	4.8	4.3	4.3
Degree Utilization, x	0.01	0.06	0.22	0.32
Capacity (veh/h)	624	673	820	819
Control Delay (s)	8.2	8.1	8.5	9.2
Approach Delay (s)	8.2	8.1	8.5	9.2
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.8		
Level of Service	A		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/7/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	33	23	98	109	79
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.92	0.92	0.66	0.66
Hourly flow rate (vph)	69	43	25	107	165	120
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	398	241	285			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	398	241	285			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	95	98			
cM capacity (veh/h)	588	787	1277			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	112	132	285
Volume Left	69	25	0
Volume Right	43	0	120
cSH	651	1277	1700
Volume to Capacity	0.17	0.02	0.17
Queue Length 95th (ft)	15	1	0
Control Delay (s)	11.7	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	11.7	1.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	743	9	19	564	68	4	17	18	60	18	75
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.94			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1484	2974		1486	2921			1450			1421	
Flt Permitted	0.28	1.00		0.27	1.00			0.98			0.88	
Satd. Flow (perm)	441	2974		416	2921			1424			1278	
Peak-hour factor, PHF	0.97	0.97	0.97	0.85	0.85	0.85	0.87	0.87	0.87	0.72	0.72	0.72
Adj. Flow (vph)	66	766	9	22	664	80	5	20	21	83	25	104
RTOR Reduction (vph)	0	2	0	0	23	0	0	11	0	0	49	0
Lane Group Flow (vph)	66	773	0	22	721	0	0	35	0	0	163	0
Confl. Peds. (#/hr)	8		6	6		8	8		8	6		6
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.0	22.0		22.0	22.0			25.0			25.0	
Effective Green, g (s)	22.0	22.0		22.0	22.0			25.0			25.0	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.45			0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	176	1189		166	1168			647			580	
v/s Ratio Prot		c0.26			0.25							
v/s Ratio Perm	0.15			0.05				0.02			c0.13	
v/c Ratio	0.38	0.65		0.13	0.62			0.05			0.28	
Uniform Delay, d1	11.6	13.4		10.5	13.1			8.4			9.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.3	1.3		0.4	1.0			0.2			1.2	
Delay (s)	13.0	14.7		10.8	14.1			8.5			10.6	
Level of Service	B	B		B	B			A			B	
Approach Delay (s)		14.5			14.0			8.5			10.6	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/7/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	21	48	1417	64	108	970
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	23	53	1476	67	112	1010
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2238	770			1559	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2238	770			1559	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	9	84			73	
cM capacity (veh/h)	25	334			415	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	76	738	738	67	112	505	505
Volume Left	23	0	0	0	112	0	0
Volume Right	53	0	0	67	0	0	0
cSH	71	1700	1700	1700	415	1700	1700
Volume to Capacity	1.06	0.43	0.43	0.04	0.27	0.30	0.30
Queue Length 95th (ft)	141	0	0	0	27	0	0
Control Delay (s)	226.5	0.0	0.0	0.0	16.9	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	226.5	0.0			1.7		
Approach LOS	F						

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: GLENDORA AV & SIERRA VISTA

7/22/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	36	382	21	51	391
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.78	0.78	0.94	0.94	0.89	0.89
Hourly flow rate (vph)	18	46	406	22	57	439
Pedestrians	1		1			1
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	743	205			430	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	743	205			430	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	94			95	
cM capacity (veh/h)	332	800			1125	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	64	203	203	22	204	293
Volume Left	18	0	0	0	57	0
Volume Right	46	0	0	22	0	0
cSH	574	1700	1700	1700	1125	1700
Volume to Capacity	0.11	0.12	0.12	0.01	0.05	0.17
Queue Length 95th (ft)	9	0	0	0	4	0
Control Delay (s)	12.1	0.0	0.0	0.0	2.7	0.0
Lane LOS	B				A	
Approach Delay (s)	12.1	0.0			1.1	
Approach LOS	B					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	61	5	10	38	0	7	0	27	25	16	11
Peak Hour Factor	0.59	0.59	0.59	0.57	0.57	0.57	0.70	0.70	0.70	0.59	0.59	0.59
Hourly flow rate (vph)	0	103	8	18	67	0	10	0	39	42	27	19

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	112	84	49	56	32
Volume Left (vph)	0	18	10	42	0
Volume Right (vph)	8	0	39	0	19
Hadj (s)	-0.01	0.08	-0.40	0.41	-0.37
Departure Headway (s)	4.3	4.4	4.2	5.4	4.6
Degree Utilization, x	0.13	0.10	0.06	0.08	0.04
Capacity (veh/h)	805	774	815	634	740
Control Delay (s)	8.0	7.9	7.4	7.7	6.6
Approach Delay (s)	8.0	7.9	7.4	7.3	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.7		
Level of Service	A		
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1341	4	2	610	11	2	0	7	7	1	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.80	0.80	0.80	0.56	0.56	0.56	0.78	0.78	0.78
Hourly flow rate (vph)	13	1382	4	2	762	14	4	0	12	9	1	22
Pedestrians		4			4			1			4	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	780			1388			1823	2196	696	1506	2186	389
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	780			1388			1823	2196	696	1506	2186	389
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			92	100	97	89	97	96
cM capacity (veh/h)	830			489			44	43	382	79	44	605

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	474	922	4	257	508	14	16	32
Volume Left	13	0	0	2	0	0	4	9
Volume Right	0	0	4	0	0	14	12	22
cSH	830	1700	1700	489	1700	1700	142	179
Volume to Capacity	0.02	0.54	0.00	0.01	0.30	0.01	0.11	0.18
Queue Length 95th (ft)	1	0	0	0	0	0	9	16
Control Delay (s)	0.5	0.0	0.0	0.2	0.0	0.0	33.6	29.5
Lane LOS	A			A			D	D
Approach Delay (s)	0.2			0.1			33.6	29.5
Approach LOS							D	D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
5: DEL VALLE AV & AMAR RD

7/7/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1175	92	112	845	101	162
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1293	1490	2980	1398	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1293	1490	2980	1398	
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.84	0.84
Adj. Flow (vph)	1237	97	119	899	120	193
RTOR Reduction (vph)	0	55	0	0	97	0
Lane Group Flow (vph)	1237	42	119	899	216	0
Confl. Peds. (#/hr)		4	4		23	
Confl. Bikes (#/hr)		3				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	560	124	1738	396	
v/s Ratio Prot	c0.42		c0.08	0.30	c0.15	
v/s Ratio Perm		0.03				
v/c Ratio	0.96	0.08	0.96	0.52	0.55	
Uniform Delay, d1	16.5	10.0	27.4	7.5	18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.9	0.1	67.4	0.3	5.3	
Delay (s)	32.4	10.0	94.8	7.7	23.6	
Level of Service	C	B	F	A	C	
Approach Delay (s)	30.8			17.9	23.6	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	37	27	10	12	38	21	166	7	51	114	15
Peak Hour Factor	0.76	0.76	0.76	0.77	0.77	0.77	0.80	0.80	0.80	0.90	0.90	0.90
Hourly flow rate (vph)	66	49	36	13	16	49	26	208	9	57	127	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	150	78	243	200
Volume Left (vph)	66	13	26	57
Volume Right (vph)	36	49	9	17
Hadj (s)	-0.02	-0.31	0.03	0.04
Departure Headway (s)	5.1	4.9	4.8	4.8
Degree Utilization, x	0.21	0.11	0.32	0.27
Capacity (veh/h)	646	652	714	698
Control Delay (s)	9.4	8.5	10.1	9.6
Approach Delay (s)	9.4	8.5	10.1	9.6
Approach LOS	A	A	B	A

Intersection Summary			
Delay	9.6		
Level of Service	A		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	0	18	0	20	2	173	26	29	126	2
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.79	0.79	0.79	0.76	0.76	0.76
Hourly flow rate (vph)	4	0	0	23	0	25	3	219	33	38	166	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	4	48	254	207
Volume Left (vph)	4	23	3	38
Volume Right (vph)	0	25	33	3
Hadj (s)	0.23	-0.19	-0.04	0.06
Departure Headway (s)	5.2	4.7	4.2	4.3
Degree Utilization, x	0.01	0.06	0.30	0.25
Capacity (veh/h)	620	686	836	801
Control Delay (s)	8.2	8.0	9.0	8.8
Approach Delay (s)	8.2	8.0	9.0	8.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.8		
Level of Service	A		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/7/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	54	11	18	154	96	47
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.92	0.92	0.66	0.66
Hourly flow rate (vph)	70	14	20	167	145	71
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	404	197	217			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404	197	217			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	98	99			
cM capacity (veh/h)	586	833	1353			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	84	187	217
Volume Left	70	20	0
Volume Right	14	0	71
cSH	617	1353	1700
Volume to Capacity	0.14	0.01	0.13
Queue Length 95th (ft)	12	1	0
Control Delay (s)	11.8	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	11.8	0.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	1250	11	15	561	62	3	15	27	43	15	63
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1483	2977		1490	2925			1417			1429	
Flt Permitted	0.34	1.00		0.14	1.00			0.99			0.89	
Satd. Flow (perm)	525	2977		212	2925			1403			1296	
Peak-hour factor, PHF	0.97	0.97	0.97	0.85	0.85	0.85	0.87	0.87	0.87	0.72	0.72	0.72
Adj. Flow (vph)	114	1289	11	18	660	73	3	17	31	60	21	88
RTOR Reduction (vph)	0	1	0	0	16	0	0	21	0	0	60	0
Lane Group Flow (vph)	114	1299	0	18	717	0	0	30	0	0	109	0
Confl. Peds. (#/hr)	9					9			9	9		
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.6	29.6		29.6	29.6			17.4			17.4	
Effective Green, g (s)	29.6	29.6		29.6	29.6			17.4			17.4	
Actuated g/C Ratio	0.54	0.54		0.54	0.54			0.32			0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	282	1602		114	1574			443			410	
v/s Ratio Prot		c0.44			0.25							
v/s Ratio Perm	0.22			0.08				0.02			c0.08	
v/c Ratio	0.40	0.81		0.16	0.46			0.07			0.27	
Uniform Delay, d1	7.5	10.4		6.4	7.8			13.1			14.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	3.2		0.7	0.2			0.3			1.6	
Delay (s)	8.4	13.6		7.1	8.0			13.4			15.6	
Level of Service	A	B		A	A			B			B	
Approach Delay (s)		13.2			8.0			13.4			15.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

EXISTING + PROJECT
TRAFFIC CONDITIONS

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/5/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	31	60	1173	39	52	1118
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.83	0.83	0.86	0.86	0.89	0.89
Hourly flow rate (vph)	37	72	1364	45	58	1256
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2141	714			1425	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2141	714			1425	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	80			87	
cM capacity (veh/h)	36	364			467	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	110	682	682	45	58	628	628
Volume Left	37	0	0	0	58	0	0
Volume Right	72	0	0	45	0	0	0
cSH	88	1700	1700	1700	467	1700	1700
Volume to Capacity	1.25	0.40	0.40	0.03	0.13	0.37	0.37
Queue Length 95th (ft)	198	0	0	0	11	0	0
Control Delay (s)	263.4	0.0	0.0	0.0	13.8	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	263.4	0.0			0.6		
Approach LOS	F						

Intersection Summary			
Average Delay	10.5		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: GLENDORA AV & SIERRA VISTA

7/5/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	48	100	420	30	51	317
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.66	0.66	0.90	0.90	0.81	0.81
Hourly flow rate (vph)	73	152	467	33	63	391
Pedestrians	3		3			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	794	239			503	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	794	239			503	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	80			94	
cM capacity (veh/h)	304	758			1055	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	224	233	233	33	193	261
Volume Left	73	0	0	0	63	0
Volume Right	152	0	0	33	0	0
cSH	511	1700	1700	1700	1055	1700
Volume to Capacity	0.44	0.14	0.14	0.02	0.06	0.15
Queue Length 95th (ft)	55	0	0	0	5	0
Control Delay (s)	17.4	0.0	0.0	0.0	3.2	0.0
Lane LOS	C				A	
Approach Delay (s)	17.4	0.0			1.4	
Approach LOS	C					

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	84	6	20	76	0	11	0	72	69	49	47
Peak Hour Factor	0.64	0.64	0.64	0.73	0.73	0.73	0.47	0.47	0.47	0.47	0.47	0.47
Hourly flow rate (vph)	2	131	9	27	104	0	23	0	153	147	104	100

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	142	132	177	199	152
Volume Left (vph)	2	27	23	147	0
Volume Right (vph)	9	0	153	0	100
Hadj (s)	0.00	0.08	-0.46	0.40	-0.43
Departure Headway (s)	5.4	5.5	4.8	5.9	5.0
Degree Utilization, x	0.21	0.20	0.23	0.32	0.21
Capacity (veh/h)	609	597	700	586	681
Control Delay (s)	9.8	9.8	9.2	10.4	8.2
Approach Delay (s)	9.8	9.8	9.2	9.5	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	9.5		
Level of Service	A		
Intersection Capacity Utilization	33.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	563	3	8	1208	4	1	2	12	12	3	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.94	0.94	0.94	0.54	0.54	0.54	0.61	0.61	0.61
Hourly flow rate (vph)	27	678	4	9	1285	4	2	4	22	20	5	59
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	1296			689			1466	2052	353	1732	2051	657
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1296			689			1466	2052	353	1732	2051	657
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			97	93	97	59	90	85
cM capacity (veh/h)	527			896			66	51	636	48	51	403

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	253	452	4	437	857	4	28	84
Volume Left	27	0	0	9	0	0	2	20
Volume Right	0	0	4	0	0	4	22	59
cSH	527	1700	1700	896	1700	1700	205	128
Volume to Capacity	0.05	0.27	0.00	0.01	0.50	0.00	0.14	0.65
Queue Length 95th (ft)	4	0	0	1	0	0	12	87
Control Delay (s)	1.9	0.0	0.0	0.3	0.0	0.0	25.3	74.6
Lane LOS	A			A			D	F
Approach Delay (s)	0.7			0.1			25.3	74.6
Approach LOS							D	F

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	742	121	133	1364	186	124
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.95	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	2980	1294	1490	2980	1433	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	2980	1294	1490	2980	1433	
Peak-hour factor, PHF	0.82	0.82	0.95	0.95	0.82	0.82
Adj. Flow (vph)	905	148	140	1436	227	151
RTOR Reduction (vph)	0	90	0	0	40	0
Lane Group Flow (vph)	905	58	140	1436	338	0
Confl. Peds. (#/hr)		3	3		35	
Confl. Bikes (#/hr)		4				1
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	23.7	23.7	6.4	34.1	17.9	
Effective Green, g (s)	23.7	23.7	6.4	34.1	17.9	
Actuated g/C Ratio	0.39	0.39	0.11	0.57	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1177	511	158	1693	427	
v/s Ratio Prot	0.30		0.09	c0.48	c0.24	
v/s Ratio Perm		0.05				
v/c Ratio	0.77	0.11	0.89	0.85	0.79	
Uniform Delay, d1	15.8	11.5	26.4	10.8	19.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.1	40.2	4.2	13.9	
Delay (s)	18.9	11.6	66.6	15.0	33.3	
Level of Service	B	B	E	B	C	
Approach Delay (s)	17.8			19.5	33.3	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	26	58	42	26	126	28	157	10	51	217	19
Peak Hour Factor	0.65	0.65	0.65	0.72	0.72	0.72	0.88	0.88	0.88	0.70	0.70	0.70
Hourly flow rate (vph)	28	40	89	58	36	175	32	178	11	73	310	27

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	157	269	222	410
Volume Left (vph)	28	58	32	73
Volume Right (vph)	89	175	11	27
Hadj (s)	-0.27	-0.31	0.03	0.03
Departure Headway (s)	6.1	5.8	6.0	5.7
Degree Utilization, x	0.26	0.43	0.37	0.64
Capacity (veh/h)	506	564	540	608
Control Delay (s)	11.2	13.1	12.5	18.3
Approach Delay (s)	11.2	13.1	12.5	18.3
Approach LOS	B	B	B	C

Intersection Summary			
Delay	14.7		
Level of Service	B		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	0	10	57	0	20	4	193	23	50	270	5
Peak Hour Factor	0.25	0.25	0.25	0.74	0.74	0.74	0.72	0.72	0.72	0.75	0.75	0.75
Hourly flow rate (vph)	60	0	40	77	0	27	6	268	32	67	360	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	100	104	306	433
Volume Left (vph)	60	77	6	67
Volume Right (vph)	40	27	32	7
Hadj (s)	-0.09	0.03	-0.03	0.06
Departure Headway (s)	5.9	6.0	5.1	5.0
Degree Utilization, x	0.16	0.17	0.43	0.60
Capacity (veh/h)	517	519	671	694
Control Delay (s)	10.1	10.3	12.0	15.4
Approach Delay (s)	10.1	10.3	12.0	15.4
Approach LOS	B	B	B	C

Intersection Summary			
Delay	13.1		
Level of Service	B		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/5/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	93	48	41	122	206	136
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.55	0.55	0.77	1.00	0.78	0.78
Hourly flow rate (vph)	169	87	53	122	264	174
Pedestrians	2			26	26	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			2	2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	608	379	440			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	608	379	440			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	60	87	95			
cM capacity (veh/h)	427	652	1118			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	256	175	438
Volume Left	169	53	0
Volume Right	87	0	174
cSH	484	1118	1700
Volume to Capacity	0.53	0.05	0.26
Queue Length 95th (ft)	76	4	0
Control Delay (s)	20.5	2.8	0.0
Lane LOS	C	A	
Approach Delay (s)	20.5	2.8	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	540	4	31	1082	89	5	24	36	122	23	138
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1489	2976		1484	2940			1433			1420	
Flt Permitted	0.16	1.00		0.39	1.00			0.97			0.83	
Satd. Flow (perm)	256	2976		608	2940			1398			1198	
Peak-hour factor, PHF	0.88	0.88	0.88	0.94	0.94	0.94	0.74	0.74	0.74	0.84	0.84	0.84
Adj. Flow (vph)	60	614	5	33	1151	95	7	32	49	145	27	164
RTOR Reduction (vph)	0	1	0	0	12	0	0	32	0	0	32	0
Lane Group Flow (vph)	60	618	0	33	1234	0	0	56	0	0	304	0
Confl. Peds. (#/hr)	4		7	7		4	8		2	2		8
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.5	24.5		24.5	24.5			17.5			17.5	
Effective Green, g (s)	24.5	24.5		24.5	24.5			17.5			17.5	
Actuated g/C Ratio	0.49	0.49		0.49	0.49			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	125	1458		297	1440			489			419	
v/s Ratio Prot		0.21			c0.42							
v/s Ratio Perm	0.23			0.05				0.04			c0.25	
v/c Ratio	0.48	0.42		0.11	0.86			0.11			0.73	
Uniform Delay, d1	8.5	8.2		6.9	11.2			11.0			14.2	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.9	0.2		0.2	5.3			0.5			10.5	
Delay (s)	11.4	8.4		7.0	16.5			11.5			24.6	
Level of Service	B	A		A	B			B			C	
Approach Delay (s)		8.7			16.2			11.5			24.6	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	57	10	16	53	0	6	0	33	24	23	17
Peak Hour Factor	0.59	0.59	0.59	0.57	0.57	0.57	0.70	0.70	0.70	0.59	0.59	0.59
Hourly flow rate (vph)	0	97	17	28	93	0	9	0	47	41	39	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	114	121	56	60	48
Volume Left (vph)	0	28	9	41	0
Volume Right (vph)	17	0	47	0	29
Hadj (s)	-0.06	0.08	-0.44	0.37	-0.38
Departure Headway (s)	4.4	4.5	4.2	5.5	4.7
Degree Utilization, x	0.14	0.15	0.07	0.09	0.06
Capacity (veh/h)	787	759	793	623	722
Control Delay (s)	8.1	8.3	7.5	7.8	6.8
Approach Delay (s)	8.1	8.3	7.5	7.4	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	814	3	3	633	8	1	1	7	6	0	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.80	0.80	0.80	0.56	0.56	0.56	0.78	0.78	0.78
Hourly flow rate (vph)	20	839	3	4	791	10	2	2	12	8	0	33
Pedestrians		10			10			6			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	811			848			1331	1703	436	1291	1696	416
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	811			848			1331	1703	436	1291	1696	416
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			98	98	98	93	100	94
cM capacity (veh/h)	804			781			101	87	561	110	88	576

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	299	559	3	268	528	10	16	41
Volume Left	20	0	0	4	0	0	2	8
Volume Right	0	0	3	0	0	10	12	33
cSH	804	1700	1700	781	1700	1700	266	322
Volume to Capacity	0.02	0.33	0.00	0.00	0.31	0.01	0.06	0.13
Queue Length 95th (ft)	2	0	0	0	0	0	5	11
Control Delay (s)	0.9	0.0	0.0	0.2	0.0	0.0	19.4	17.8
Lane LOS	A			A			C	C
Approach Delay (s)	0.3			0.1			19.4	17.8
Approach LOS							C	C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1157	100	116	856	103	152
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.90	1.00	1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1202	1490	2980	1363	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1202	1490	2980	1363	
Peak-hour factor, PHF	0.95	0.95	0.94	0.94	0.84	0.84
Adj. Flow (vph)	1218	105	123	911	123	181
RTOR Reduction (vph)	0	60	0	0	88	0
Lane Group Flow (vph)	1218	46	123	911	216	0
Confl. Peds. (#/hr)		41	41		41	41
Confl. Bikes (#/hr)		4				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	520	124	1738	386	
v/s Ratio Prot	c0.41		c0.08	0.31	c0.16	
v/s Ratio Perm		0.04				
v/c Ratio	0.94	0.09	0.99	0.52	0.56	
Uniform Delay, d1	16.3	10.0	27.5	7.5	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.7	0.1	78.1	0.3	5.7	
Delay (s)	30.0	10.1	105.5	7.8	24.1	
Level of Service	C	B	F	A	C	
Approach Delay (s)	28.4			19.4	24.1	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	30	40	17	9	66	26	133	12	69	141	27
Peak Hour Factor	0.76	0.76	0.76	0.77	0.77	0.77	0.80	0.80	0.80	0.90	0.90	0.90
Hourly flow rate (vph)	46	39	53	22	12	86	32	166	15	77	157	30

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	138	119	214	263
Volume Left (vph)	46	22	33	77
Volume Right (vph)	53	86	15	30
Hadj (s)	-0.13	-0.36	0.02	0.02
Departure Headway (s)	5.1	4.9	4.9	4.9
Degree Utilization, x	0.20	0.16	0.29	0.36
Capacity (veh/h)	630	647	682	694
Control Delay (s)	9.4	8.9	10.0	10.6
Approach Delay (s)	9.4	8.9	10.0	10.6
Approach LOS	A	A	A	B

Intersection Summary			
Delay	9.9		
Level of Service	A		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	0	7	22	0	12	9	132	14	35	166	16
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.79	0.79	0.79	0.76	0.76	0.76
Hourly flow rate (vph)	20	0	14	28	0	15	11	167	18	46	218	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	34	43	196	286
Volume Left (vph)	20	28	11	46
Volume Right (vph)	14	15	18	21
Hadj (s)	-0.10	-0.05	-0.01	0.02
Departure Headway (s)	4.9	5.0	4.4	4.3
Degree Utilization, x	0.05	0.06	0.24	0.34
Capacity (veh/h)	652	649	792	805
Control Delay (s)	8.2	8.3	8.8	9.6
Approach Delay (s)	8.2	8.3	8.8	9.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.1		
Level of Service	A		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/7/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	59	33	23	101	113	82
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.92	0.92	0.66	0.66
Hourly flow rate (vph)	77	43	25	110	171	124
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	409	249	295			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	409	249	295			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	94	98			
cM capacity (veh/h)	579	779	1266			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	119	135	295
Volume Left	77	25	0
Volume Right	43	0	124
cSH	638	1266	1700
Volume to Capacity	0.19	0.02	0.17
Queue Length 95th (ft)	17	2	0
Control Delay (s)	11.9	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	11.9	1.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	743	9	19	564	69	4	17	18	62	18	77
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.94			0.93	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1484	2974		1486	2920			1450			1420	
Flt Permitted	0.28	1.00		0.27	1.00			0.98			0.88	
Satd. Flow (perm)	442	2974		417	2920			1424			1275	
Peak-hour factor, PHF	0.97	0.97	0.97	0.85	0.85	0.85	0.87	0.87	0.87	0.72	0.72	0.72
Adj. Flow (vph)	68	766	9	22	664	81	5	20	21	86	25	107
RTOR Reduction (vph)	0	2	0	0	23	0	0	11	0	0	49	0
Lane Group Flow (vph)	68	773	0	22	722	0	0	35	0	0	169	0
Confl. Peds. (#/hr)	8		6	6		8	8		8	6		6
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.1	22.1		22.1	22.1			24.9			24.9	
Effective Green, g (s)	22.1	22.1		22.1	22.1			24.9			24.9	
Actuated g/C Ratio	0.40	0.40		0.40	0.40			0.45			0.45	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	177	1195		167	1173			644			577	
v/s Ratio Prot		c0.26			0.25							
v/s Ratio Perm	0.15			0.05				0.02			c0.13	
v/c Ratio	0.38	0.65		0.13	0.62			0.05			0.29	
Uniform Delay, d1	11.6	13.3		10.4	13.1			8.4			9.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.4	1.2		0.4	1.0			0.2			1.3	
Delay (s)	13.0	14.5		10.7	14.0			8.6			10.8	
Level of Service	B	B		B	B			A			B	
Approach Delay (s)		14.4			13.9			8.6			10.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/7/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	21	51	1417	66	108	972
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	23	56	1476	69	112	1012
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			460
pX, platoon unblocked						
vC, conflicting volume	2239	770			1561	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2239	770			1561	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	9	83			73	
cM capacity (veh/h)	25	334			414	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	79	738	738	69	112	506	506
Volume Left	23	0	0	0	112	0	0
Volume Right	56	0	0	69	0	0	0
cSH	73	1700	1700	1700	414	1700	1700
Volume to Capacity	1.08	0.43	0.43	0.04	0.27	0.30	0.30
Queue Length 95th (ft)	145	0	0	0	27	0	0
Control Delay (s)	226.4	0.0	0.0	0.0	16.9	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	226.4	0.0			1.7		
Approach LOS	F						

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	36	382	27	51	391
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.78	0.78	0.94	0.94	0.89	0.89
Hourly flow rate (vph)	22	46	406	29	57	439
Pedestrians	1		1			1
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	743	205			436	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	743	205			436	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	94			95	
cM capacity (veh/h)	332	800			1119	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	68	203	203	29	204	293
Volume Left	22	0	0	0	57	0
Volume Right	46	0	0	29	0	0
cSH	551	1700	1700	1700	1119	1700
Volume to Capacity	0.12	0.12	0.12	0.02	0.05	0.17
Queue Length 95th (ft)	10	0	0	0	4	0
Control Delay (s)	12.4	0.0	0.0	0.0	2.7	0.0
Lane LOS	B				A	
Approach Delay (s)	12.4	0.0			1.1	
Approach LOS	B					

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	67	5	10	41	0	7	0	27	25	16	11
Peak Hour Factor	0.59	0.59	0.59	0.57	0.57	0.57	0.70	0.70	0.70	0.59	0.59	0.59
Hourly flow rate (vph)	0	114	8	18	72	0	10	0	39	42	27	19

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	122	89	49	56	32
Volume Left (vph)	0	18	10	42	0
Volume Right (vph)	8	0	39	0	19
Hadj (s)	-0.01	0.07	-0.40	0.41	-0.37
Departure Headway (s)	4.3	4.4	4.2	5.4	4.7
Degree Utilization, x	0.15	0.11	0.06	0.08	0.04
Capacity (veh/h)	803	772	805	628	733
Control Delay (s)	8.1	8.0	7.5	7.7	6.7
Approach Delay (s)	8.1	8.0	7.5	7.3	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1343	4	2	612	11	2	0	7	7	1	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	0.97	0.97	0.80	0.80	0.80	0.56	0.56	0.56	0.78	0.78	0.78
Hourly flow rate (vph)	13	1385	4	2	765	14	4	0	12	9	1	22
Pedestrians		4			4			1			4	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	783			1390			1826	2200	697	1510	2190	390
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	783			1390			1826	2200	697	1510	2190	390
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			92	100	97	89	97	96
cM capacity (veh/h)	828			488			44	43	382	78	44	604

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	475	923	4	258	510	14	16	32
Volume Left	13	0	0	2	0	0	4	9
Volume Right	0	0	4	0	0	14	12	22
cSH	828	1700	1700	488	1700	1700	141	178
Volume to Capacity	0.02	0.54	0.00	0.01	0.30	0.01	0.11	0.18
Queue Length 95th (ft)	1	0	0	0	0	0	9	16
Control Delay (s)	0.5	0.0	0.0	0.2	0.0	0.0	33.7	29.7
Lane LOS	A			A			D	D
Approach Delay (s)	0.2			0.1			33.7	29.7
Approach LOS							D	D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	37	29	10	12	38	23	172	7	51	127	15
Peak Hour Factor	0.76	0.76	0.76	0.77	0.77	0.77	0.80	0.80	0.80	0.90	0.90	0.90
Hourly flow rate (vph)	66	49	38	13	16	49	29	215	9	57	141	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	153	78	253	214
Volume Left (vph)	66	13	29	57
Volume Right (vph)	38	49	9	17
Hadj (s)	-0.03	-0.31	0.04	0.04
Departure Headway (s)	5.1	5.0	4.8	4.9
Degree Utilization, x	0.22	0.11	0.34	0.29
Capacity (veh/h)	637	639	708	694
Control Delay (s)	9.6	8.6	10.3	9.9
Approach Delay (s)	9.6	8.6	10.3	9.9
Approach LOS	A	A	B	A

Intersection Summary			
Delay	9.8		
Level of Service	A		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	50	37	29	10	12	38	23	172	7	51	127	15
Peak Hour Factor	0.76	0.76	0.76	0.77	0.77	0.77	0.80	0.80	0.80	0.90	0.90	0.90
Hourly flow rate (vph)	66	49	38	13	16	49	29	215	9	57	141	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	153	78	253	214
Volume Left (vph)	66	13	29	57
Volume Right (vph)	38	49	9	17
Hadj (s)	-0.03	-0.31	0.04	0.04
Departure Headway (s)	5.1	5.0	4.8	4.9
Degree Utilization, x	0.22	0.11	0.34	0.29
Capacity (veh/h)	637	639	708	694
Control Delay (s)	9.6	8.6	10.3	9.9
Approach Delay (s)	9.6	8.6	10.3	9.9
Approach LOS	A	A	B	A

Intersection Summary			
Delay	9.8		
Level of Service	A		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	0	7	18	0	20	11	173	26	29	126	17
Peak Hour Factor	0.50	0.50	0.50	0.79	0.79	0.79	0.79	0.79	0.79	0.76	0.76	0.76
Hourly flow rate (vph)	20	0	14	23	0	25	14	219	33	38	166	22

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	34	48	266	226
Volume Left (vph)	20	23	14	38
Volume Right (vph)	14	25	33	22
Hadj (s)	-0.10	-0.19	-0.03	0.01
Departure Headway (s)	5.0	4.9	4.3	4.4
Degree Utilization, x	0.05	0.06	0.32	0.28
Capacity (veh/h)	646	662	808	788
Control Delay (s)	8.2	8.2	9.3	9.1
Approach Delay (s)	8.2	8.2	9.3	9.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.1		
Level of Service	A		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/7/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	60	11	18	157	100	50
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.92	0.92	0.66	0.66
Hourly flow rate (vph)	78	14	20	171	152	76
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	415	205	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	415	205	227			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	98	99			
cM capacity (veh/h)	577	824	1341			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	92	190	227
Volume Left	78	20	0
Volume Right	14	0	76
cSH	605	1341	1700
Volume to Capacity	0.15	0.01	0.13
Queue Length 95th (ft)	13	1	0
Control Delay (s)	12.0	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	12.0	0.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	1250	11	15	561	63	3	15	27	45	15	65
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1483	2977		1490	2924			1417			1428	
Flt Permitted	0.34	1.00		0.14	1.00			0.99			0.89	
Satd. Flow (perm)	524	2977		212	2924			1403			1293	
Peak-hour factor, PHF	0.97	0.97	0.97	0.85	0.85	0.85	0.87	0.87	0.87	0.72	0.72	0.72
Adj. Flow (vph)	116	1289	11	18	660	74	3	17	31	62	21	90
RTOR Reduction (vph)	0	1	0	0	17	0	0	21	0	0	62	0
Lane Group Flow (vph)	116	1299	0	18	717	0	0	30	0	0	111	0
Confl. Peds. (#/hr)	9					9			9	9		
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.6	29.6		29.6	29.6			17.4			17.4	
Effective Green, g (s)	29.6	29.6		29.6	29.6			17.4			17.4	
Actuated g/C Ratio	0.54	0.54		0.54	0.54			0.32			0.32	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	282	1602		114	1573			443			409	
v/s Ratio Prot		c0.44			0.25							
v/s Ratio Perm	0.22			0.08				0.02			c0.09	
v/c Ratio	0.41	0.81		0.16	0.46			0.07			0.27	
Uniform Delay, d1	7.5	10.4		6.4	7.8			13.1			14.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	3.2		0.7	0.2			0.3			1.6	
Delay (s)	8.5	13.6		7.1	8.0			13.4			15.7	
Level of Service	A	B		A	A			B			B	
Approach Delay (s)		13.2			8.0			13.4			15.7	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

FUTURE
EXISTING + AMBIENT GROWTH
PROJECT TRAFFIC CONDITIONS

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/5/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	31	56	1189	39	53	1132
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	61	1292	42	58	1230
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2055	678			1351	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2055	678			1351	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	18	84			88	
cM capacity (veh/h)	41	384			499	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	95	646	646	42	58	615	615
Volume Left	34	0	0	0	58	0	0
Volume Right	61	0	0	42	0	0	0
cSH	97	1700	1700	1700	499	1700	1700
Volume to Capacity	0.98	0.38	0.38	0.02	0.12	0.36	0.36
Queue Length 95th (ft)	145	0	0	0	10	0	0
Control Delay (s)	164.8	0.0	0.0	0.0	13.2	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	164.8	0.0			0.6		
Approach LOS	F						

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: GLENDORA AV & SIERRA VISTA

7/22/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	46	101	426	28	52	321
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	50	110	463	30	57	349
Pedestrians	3		3			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	757	238			496	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	757	238			496	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	85	86			95	
cM capacity (veh/h)	324	760			1061	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	160	232	232	30	173	233
Volume Left	50	0	0	0	57	0
Volume Right	110	0	0	30	0	0
cSH	535	1700	1700	1700	1061	1700
Volume to Capacity	0.30	0.14	0.14	0.02	0.05	0.14
Queue Length 95th (ft)	31	0	0	0	4	0
Control Delay (s)	14.6	0.0	0.0	0.0	3.1	0.0
Lane LOS	B				A	
Approach Delay (s)	14.6	0.0			1.3	
Approach LOS	B					

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	83	6	20	77	0	11	0	73	70	50	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	90	7	22	84	0	12	0	79	76	54	52

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	98	105	91	103	79
Volume Left (vph)	1	22	12	76	0
Volume Right (vph)	7	0	79	0	52
Hadj (s)	0.00	0.08	-0.46	0.40	-0.43
Departure Headway (s)	4.7	4.7	4.3	5.5	4.7
Degree Utilization, x	0.13	0.14	0.11	0.16	0.10
Capacity (veh/h)	717	709	793	626	736
Control Delay (s)	8.4	8.5	7.8	8.3	7.0
Approach Delay (s)	8.4	8.5	7.8	7.7	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	570	3	8	1223	4	1	2	12	12	3	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	620	3	9	1329	4	1	2	13	13	3	40
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	1341			630			1405	2032	324	1732	2031	679
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1341			630			1405	2032	324	1732	2031	679
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			99	96	98	74	94	90
cM capacity (veh/h)	507			943			79	53	664	50	53	390

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	230	413	3	452	886	4	16	57
Volume Left	24	0	0	9	0	0	1	13
Volume Right	0	0	3	0	0	4	13	40
cSH	507	1700	1700	943	1700	1700	219	133
Volume to Capacity	0.05	0.24	0.00	0.01	0.52	0.00	0.07	0.42
Queue Length 95th (ft)	4	0	0	1	0	0	6	46
Control Delay (s)	1.9	0.0	0.0	0.3	0.0	0.0	22.8	50.7
Lane LOS	A			A			C	F
Approach Delay (s)	0.7			0.1			22.8	50.7
Approach LOS							C	F

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
5: DEL VALLE AV & AMAR RD

7/5/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	752	120	134	1383	183	125
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.95	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	2980	1294	1490	2980	1432	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	2980	1294	1490	2980	1432	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	817	130	146	1503	199	136
RTOR Reduction (vph)	0	83	0	0	41	0
Lane Group Flow (vph)	817	47	146	1503	294	0
Confl. Peds. (#/hr)		3	3		35	
Confl. Bikes (#/hr)		4				1
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	21.7	21.7	7.9	33.6	18.4	
Effective Green, g (s)	21.7	21.7	7.9	33.6	18.4	
Actuated g/C Ratio	0.36	0.36	0.13	0.56	0.31	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1077	467	196	1668	439	
v/s Ratio Prot	0.27		0.10	c0.50	c0.21	
v/s Ratio Perm		0.04				
v/c Ratio	0.76	0.10	0.74	0.90	0.67	
Uniform Delay, d1	16.8	12.7	25.1	11.7	18.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.1	14.2	7.1	7.9	
Delay (s)	20.0	12.8	39.3	18.8	26.1	
Level of Service	B	B	D	B	C	
Approach Delay (s)	19.0			20.7	26.1	
Approach LOS	B			C	C	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	26	58	43	26	128	24	151	10	52	216	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	28	63	47	28	139	26	164	11	57	235	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	111	214	201	312
Volume Left (vph)	20	47	26	57
Volume Right (vph)	63	139	11	21
Hadj (s)	-0.27	-0.31	0.03	0.03
Departure Headway (s)	5.4	5.1	5.3	5.1
Degree Utilization, x	0.16	0.31	0.29	0.44
Capacity (veh/h)	590	637	632	663
Control Delay (s)	9.4	10.4	10.5	12.1
Approach Delay (s)	9.4	10.4	10.5	12.1
Approach LOS	A	B	B	B

Intersection Summary			
Delay	10.9		
Level of Service	B		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	0	5	58	0	20	0	196	23	51	274	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	5	63	0	22	0	213	25	55	298	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	9	85	238	353
Volume Left (vph)	3	63	0	55
Volume Right (vph)	5	22	25	0
Hadj (s)	-0.27	0.03	-0.03	0.07
Departure Headway (s)	5.1	5.3	4.5	4.5
Degree Utilization, x	0.01	0.12	0.30	0.44
Capacity (veh/h)	609	610	768	777
Control Delay (s)	8.2	9.0	9.4	11.0
Approach Delay (s)	8.2	9.0	9.4	11.0
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/5/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	92	49	42	122	207	135
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	53	46	133	225	147
Pedestrians	2			26	26	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			2	2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	550	326	374			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	550	326	374			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	92	96			
cM capacity (veh/h)	466	698	1183			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	153	178	372
Volume Left	100	46	0
Volume Right	53	0	147
cSH	527	1183	1700
Volume to Capacity	0.29	0.04	0.22
Queue Length 95th (ft)	30	3	0
Control Delay (s)	14.6	2.3	0.0
Lane LOS	B	A	
Approach Delay (s)	14.6	2.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/5/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	548	4	31	1097	89	5	24	37	124	23	138
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1489	2977		1483	2940			1433			1420	
Flt Permitted	0.16	1.00		0.40	1.00			0.98			0.83	
Satd. Flow (perm)	255	2977		626	2940			1405			1211	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	596	4	34	1192	97	5	26	40	135	25	150
RTOR Reduction (vph)	0	1	0	0	12	0	0	26	0	0	28	0
Lane Group Flow (vph)	58	599	0	34	1277	0	0	45	0	0	282	0
Confl. Peds. (#/hr)	4		7	7		4	8		2	2		8
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.6	24.6		24.6	24.6			17.4			17.4	
Effective Green, g (s)	24.6	24.6		24.6	24.6			17.4			17.4	
Actuated g/C Ratio	0.49	0.49		0.49	0.49			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	125	1464		307	1446			488			421	
v/s Ratio Prot		0.20			c0.43							
v/s Ratio Perm	0.23			0.05				0.03			c0.23	
v/c Ratio	0.46	0.41		0.11	0.88			0.09			0.67	
Uniform Delay, d1	8.4	8.1		6.8	11.4			11.0			13.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.7	0.2		0.2	6.7			0.4			8.2	
Delay (s)	11.1	8.3		7.0	18.1			11.4			22.1	
Level of Service	B	A		A	B			B			C	
Approach Delay (s)		8.5			17.9			11.4			22.1	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	52	10	16	51	0	6	0	33	24	23	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	11	17	55	0	7	0	36	26	25	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	67	73	42	39	31
Volume Left (vph)	0	17	7	26	0
Volume Right (vph)	11	0	36	0	18
Hadj (s)	-0.06	0.08	-0.44	0.37	-0.38
Departure Headway (s)	4.2	4.3	3.9	5.2	4.5
Degree Utilization, x	0.08	0.09	0.05	0.06	0.04
Capacity (veh/h)	835	811	868	661	774
Control Delay (s)	7.5	7.7	7.1	7.3	6.4
Approach Delay (s)	7.5	7.7	7.1	6.9	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	823	3	3	640	8	1	1	7	6	0	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	895	3	3	696	9	1	1	8	7	0	28
Pedestrians		10			10			6			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	714			904			1334	1663	463	1219	1657	368
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	714			904			1334	1663	463	1219	1657	368
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	95	100	95
cM capacity (veh/h)	874			744			102	92	538	127	93	619

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	319	596	3	235	464	9	10	35
Volume Left	21	0	0	3	0	0	1	7
Volume Right	0	0	3	0	0	9	8	28
cSH	874	1700	1700	744	1700	1700	267	358
Volume to Capacity	0.02	0.35	0.00	0.00	0.27	0.01	0.04	0.10
Queue Length 95th (ft)	2	0	0	0	0	0	3	8
Control Delay (s)	0.8	0.0	0.0	0.2	0.0	0.0	19.0	16.1
Lane LOS	A			A			C	C
Approach Delay (s)	0.3			0.1			19.0	16.1
Approach LOS							C	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1173	90	115	868	100	153
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.90	1.00	1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1202	1490	2980	1362	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1202	1490	2980	1362	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1275	98	125	943	109	166
RTOR Reduction (vph)	0	56	0	0	92	0
Lane Group Flow (vph)	1275	42	125	943	183	0
Confl. Peds. (#/hr)		41	41		41	41
Confl. Bikes (#/hr)		4				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	520	124	1738	385	
v/s Ratio Prot	c0.43		c0.08	0.32	c0.13	
v/s Ratio Perm		0.04				
v/c Ratio	0.99	0.08	1.01	0.54	0.48	
Uniform Delay, d1	16.8	10.0	27.5	7.6	17.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.9	0.1	83.0	0.3	4.2	
Delay (s)	38.7	10.1	110.5	8.0	22.0	
Level of Service	D	B	F	A	C	
Approach Delay (s)	36.7			20.0	22.0	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	30	39	17	9	67	24	129	12	70	130	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	33	42	18	10	73	26	140	13	76	141	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	113	101	179	247
Volume Left (vph)	38	18	26	76
Volume Right (vph)	42	73	13	29
Hadj (s)	-0.12	-0.36	0.02	0.02
Departure Headway (s)	4.9	4.7	4.8	4.7
Degree Utilization, x	0.16	0.13	0.24	0.32
Capacity (veh/h)	658	683	713	727
Control Delay (s)	8.9	8.5	9.2	9.9
Approach Delay (s)	8.9	8.5	9.2	9.9
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.3		
Level of Service	A		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	0	22	0	12	0	134	14	35	168	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	24	0	13	0	146	15	38	183	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	2	37	161	222
Volume Left (vph)	2	24	0	38
Volume Right (vph)	0	13	15	1
Hadj (s)	0.23	-0.05	-0.02	0.07
Departure Headway (s)	5.0	4.7	4.2	4.2
Degree Utilization, x	0.00	0.05	0.19	0.26
Capacity (veh/h)	653	701	835	839
Control Delay (s)	8.0	7.9	8.2	8.7
Approach Delay (s)	8.0	7.9	8.2	8.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.4		
Level of Service	A		
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/8/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	54	33	23	99	111	80
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	36	25	108	121	87
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	338	180	208			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	338	180	208			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	96	98			
cM capacity (veh/h)	637	851	1363			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	95	133	208
Volume Left	59	25	0
Volume Right	36	0	87
cSH	704	1363	1700
Volume to Capacity	0.13	0.02	0.12
Queue Length 95th (ft)	12	1	0
Control Delay (s)	10.9	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	10.9	1.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	753	9	19	572	69	4	17	18	61	18	76
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.94			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1483	2974		1486	2921			1446			1421	
Flt Permitted	0.32	1.00		0.25	1.00			0.98			0.89	
Satd. Flow (perm)	496	2974		391	2921			1427			1290	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	818	10	21	622	75	4	18	20	66	20	83
RTOR Reduction (vph)	0	2	0	0	23	0	0	11	0	0	47	0
Lane Group Flow (vph)	71	826	0	21	674	0	0	31	0	0	122	0
Confl. Peds. (#/hr)	8		6	6		8	8		8	6		6
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	23.2	23.2		23.2	23.2			23.8			23.8	
Effective Green, g (s)	23.2	23.2		23.2	23.2			23.8			23.8	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.43			0.43	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	209	1254		164	1232			617			558	
v/s Ratio Prot		c0.28			0.23							
v/s Ratio Perm	0.14			0.05				0.02			c0.09	
v/c Ratio	0.34	0.66		0.13	0.55			0.05			0.22	
Uniform Delay, d1	10.7	12.7		9.7	12.0			9.0			9.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.3		0.4	0.5			0.2			0.9	
Delay (s)	11.7	14.0		10.1	12.5			9.2			10.7	
Level of Service	B	B		B	B			A			B	
Approach Delay (s)		13.8			12.4			9.2			10.7	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/7/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	21	49	1437	65	110	984
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	53	1562	71	120	1070
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2368	813			1649	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2368	813			1649	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	83			69	
cM capacity (veh/h)	20	313			383	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	76	781	781	71	120	535	535
Volume Left	23	0	0	0	120	0	0
Volume Right	53	0	0	71	0	0	0
cSH	57	1700	1700	1700	383	1700	1700
Volume to Capacity	1.34	0.46	0.46	0.04	0.31	0.31	0.31
Queue Length 95th (ft)	167	0	0	0	33	0	0
Control Delay (s)	353.5	0.0	0.0	0.0	18.6	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	353.5	0.0			1.9		
Approach LOS	F						

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
2: GLENDORA AV & SIERRA VISTA

7/22/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	37	387	21	52	396
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	40	421	23	57	430
Pedestrians	1		1			1
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	751	212			444	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	751	212			444	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	95			95	
cM capacity (veh/h)	328	792			1111	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	55	210	210	23	200	287
Volume Left	15	0	0	0	57	0
Volume Right	40	0	0	23	0	0
cSH	571	1700	1700	1700	1111	1700
Volume to Capacity	0.10	0.12	0.12	0.01	0.05	0.17
Queue Length 95th (ft)	8	0	0	0	4	0
Control Delay (s)	12.0	0.0	0.0	0.0	2.7	0.0
Lane LOS	B				A	
Approach Delay (s)	12.0	0.0			1.1	
Approach LOS	B					

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	62	5	10	39	0	7	0	27	25	16	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	67	5	11	42	0	8	0	29	27	17	12

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	73	53	37	36	21
Volume Left (vph)	0	11	8	27	0
Volume Right (vph)	5	0	29	0	12
Hadj (s)	-0.01	0.07	-0.40	0.41	-0.37
Departure Headway (s)	4.2	4.3	3.9	5.2	4.4
Degree Utilization, x	0.08	0.06	0.04	0.05	0.03
Capacity (veh/h)	841	821	873	662	780
Control Delay (s)	7.5	7.5	7.1	7.3	6.3
Approach Delay (s)	7.5	7.5	7.1	7.0	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1360	4	2	619	11	2	0	7	7	1	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	1478	4	2	673	12	2	0	8	8	1	18
Pedestrians		4			4			1			4	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	689			1484			1871	2201	744	1460	2193	344
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	689			1484			1871	2201	744	1460	2193	344
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			95	100	98	91	98	97
cM capacity (veh/h)	898			449			41	43	356	86	44	647

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	507	986	4	226	449	12	10	27
Volume Left	14	0	0	2	0	0	2	8
Volume Right	0	0	4	0	0	12	8	18
cSH	898	1700	1700	449	1700	1700	132	191
Volume to Capacity	0.02	0.58	0.00	0.00	0.26	0.01	0.07	0.14
Queue Length 95th (ft)	1	0	0	0	0	0	6	12
Control Delay (s)	0.4	0.0	0.0	0.2	0.0	0.0	34.5	26.9
Lane LOS	A			A			D	D
Approach Delay (s)	0.2			0.1			34.5	26.9
Approach LOS							D	D

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
5: DEL VALLE AV & AMAR RD

7/7/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1191	93	114	857	102	164
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1293	1490	2980	1398	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1293	1490	2980	1398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1295	101	124	932	111	178
RTOR Reduction (vph)	0	57	0	0	96	0
Lane Group Flow (vph)	1295	44	124	932	193	0
Confl. Peds. (#/hr)		4	4		23	
Confl. Bikes (#/hr)		3				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	560	124	1738	396	
v/s Ratio Prot	c0.43		c0.08	0.31	c0.14	
v/s Ratio Perm		0.03				
v/c Ratio	1.00	0.08	1.00	0.54	0.49	
Uniform Delay, d1	17.0	10.0	27.5	7.6	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	25.8	0.1	80.8	0.3	4.2	
Delay (s)	42.8	10.0	108.3	7.9	22.1	
Level of Service	D	B	F	A	C	
Approach Delay (s)	40.4			19.7	22.1	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	51	38	27	10	12	39	21	168	7	52	116	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	41	29	11	13	42	23	183	8	57	126	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	126	66	213	199
Volume Left (vph)	55	11	23	57
Volume Right (vph)	29	42	8	16
Hadj (s)	-0.02	-0.32	0.03	0.04
Departure Headway (s)	5.0	4.8	4.7	4.7
Degree Utilization, x	0.17	0.09	0.28	0.26
Capacity (veh/h)	663	677	734	725
Control Delay (s)	9.0	8.2	9.4	9.3
Approach Delay (s)	9.0	8.2	9.4	9.3
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.2		
Level of Service	A		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	0	18	0	20	2	175	26	29	128	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	20	0	22	2	190	28	32	139	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	2	41	221	173
Volume Left (vph)	2	20	2	32
Volume Right (vph)	0	22	28	2
Hadj (s)	0.23	-0.19	-0.04	0.06
Departure Headway (s)	5.0	4.6	4.1	4.3
Degree Utilization, x	0.00	0.05	0.25	0.21
Capacity (veh/h)	648	717	849	814
Control Delay (s)	8.1	7.8	8.5	8.4
Approach Delay (s)	8.1	7.8	8.5	8.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.4		
Level of Service	A		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	55	11	18	156	97	48
Conflicting Peds, #/hr	16	16	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	12	20	170	105	52

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	357	148	174	0	-	0
Stage 1	148	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	641	899	1403	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	614	887	1403	-	-	-
Mov Cap-2 Maneuver	614	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	802	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1403	-	647	-	-
HCM Lane V/C Ratio	0.014	-	0.111	-	-
HCM Control Delay (s)	7.6	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/7/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	113	1268	11	15	569	63	3	15	27	44	15	64
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1482	2977		1490	2925			1418			1428	
Flt Permitted	0.36	1.00		0.13	1.00			0.99			0.90	
Satd. Flow (perm)	565	2977		207	2925			1404			1303	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	1378	12	16	618	68	3	16	29	48	16	70
RTOR Reduction (vph)	0	1	0	0	16	0	0	20	0	0	49	0
Lane Group Flow (vph)	123	1389	0	16	670	0	0	28	0	0	85	0
Confl. Peds. (#/hr)	9					9			9	9		
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.3	30.3		30.3	30.3			16.7			16.7	
Effective Green, g (s)	30.3	30.3		30.3	30.3			16.7			16.7	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.30			0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	311	1640		114	1611			426			395	
v/s Ratio Prot		c0.47			0.23							
v/s Ratio Perm	0.22			0.08				0.02			c0.07	
v/c Ratio	0.40	0.85		0.14	0.42			0.07			0.22	
Uniform Delay, d1	7.1	10.4		6.0	7.2			13.6			14.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.8	4.2		0.6	0.2			0.3			1.2	
Delay (s)	7.9	14.6		6.6	7.4			13.9			15.5	
Level of Service	A	B		A	A			B			B	
Approach Delay (s)		14.1			7.4			13.9			15.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

FUTURE
EXISTING + AMBIENT + CUMLATIVE PROJECTS
TRAFFIC CONDITIONS

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/22/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	32	54	1201	39	53	1145
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	59	1305	42	58	1245
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2075	685			1364	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2075	685			1364	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	13	85			88	
cM capacity (veh/h)	40	380			493	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	93	653	653	42	58	622	622
Volume Left	35	0	0	0	58	0	0
Volume Right	59	0	0	42	0	0	0
cSH	91	1700	1700	1700	493	1700	1700
Volume to Capacity	1.03	0.38	0.38	0.02	0.12	0.37	0.37
Queue Length 95th (ft)	152	0	0	0	10	0	0
Control Delay (s)	186.0	0.0	0.0	0.0	13.3	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	186.0	0.0			0.6		
Approach LOS	F						

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	47	101	430	28	52	326
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	110	467	30	57	354
Pedestrians	3		3			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	764	240			501	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764	240			501	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	84	86			95	
cM capacity (veh/h)	320	758			1057	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	161	234	234	30	175	236
Volume Left	51	0	0	0	57	0
Volume Right	110	0	0	30	0	0
cSH	529	1700	1700	1700	1057	1700
Volume to Capacity	0.30	0.14	0.14	0.02	0.05	0.14
Queue Length 95th (ft)	32	0	0	0	4	0
Control Delay (s)	14.8	0.0	0.0	0.0	3.1	0.0
Lane LOS	B				A	
Approach Delay (s)	14.8	0.0			1.3	
Approach LOS	B					

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	83	6	20	77	0	11	0	73	71	50	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	90	7	22	84	0	12	0	79	77	54	53

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	98	105	91	104	80
Volume Left (vph)	1	22	12	77	0
Volume Right (vph)	7	0	79	0	53
Hadj (s)	0.00	0.08	-0.46	0.40	-0.43
Departure Headway (s)	4.7	4.8	4.3	5.5	4.7
Degree Utilization, x	0.13	0.14	0.11	0.16	0.10
Capacity (veh/h)	716	708	793	626	737
Control Delay (s)	8.4	8.5	7.8	8.3	7.0
Approach Delay (s)	8.4	8.5	7.8	7.7	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	573	3	8	1227	4	1	2	12	12	3	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	623	3	9	1334	4	1	2	13	13	3	40
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	1345			633			1411	2040	325	1738	2039	681
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1345			633			1411	2040	325	1738	2039	681
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			99	96	98	74	94	90
cM capacity (veh/h)	505			940			79	52	662	50	52	388

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	232	415	3	453	889	4	16	57
Volume Left	24	0	0	9	0	0	1	13
Volume Right	0	0	3	0	0	4	13	40
cSH	505	1700	1700	940	1700	1700	217	132
Volume to Capacity	0.05	0.24	0.00	0.01	0.52	0.00	0.08	0.43
Queue Length 95th (ft)	4	0	0	1	0	0	6	47
Control Delay (s)	1.9	0.0	0.0	0.3	0.0	0.0	23.0	51.4
Lane LOS	A			A			C	F
Approach Delay (s)	0.7			0.1			23.0	51.4
Approach LOS							C	F

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	798	122	134	1409	184	126
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.95	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	2980	1294	1490	2980	1432	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	2980	1294	1490	2980	1432	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	867	133	146	1532	200	137
RTOR Reduction (vph)	0	84	0	0	41	0
Lane Group Flow (vph)	867	49	146	1532	296	0
Confl. Peds. (#/hr)		3	3		35	
Confl. Bikes (#/hr)		4				1
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	21.9	21.9	7.9	33.8	18.2	
Effective Green, g (s)	21.9	21.9	7.9	33.8	18.2	
Actuated g/C Ratio	0.36	0.36	0.13	0.56	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1087	472	196	1678	434	
v/s Ratio Prot	0.29		0.10	c0.51	c0.21	
v/s Ratio Perm		0.04				
v/c Ratio	0.80	0.10	0.74	0.91	0.68	
Uniform Delay, d1	17.1	12.6	25.1	11.8	18.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	0.1	14.2	8.0	8.4	
Delay (s)	21.2	12.7	39.3	19.8	26.8	
Level of Service	C	B	D	B	C	
Approach Delay (s)	20.1			21.5	26.8	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	26	58	43	26	128	24	152	10	52	217	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	28	63	47	28	139	26	165	11	57	236	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	111	214	202	313
Volume Left (vph)	20	47	26	57
Volume Right (vph)	63	139	11	21
Hadj (s)	-0.27	-0.31	0.03	0.03
Departure Headway (s)	5.4	5.1	5.3	5.1
Degree Utilization, x	0.17	0.31	0.30	0.45
Capacity (veh/h)	589	636	632	663
Control Delay (s)	9.4	10.4	10.5	12.2
Approach Delay (s)	9.4	10.4	10.5	12.2
Approach LOS	A	B	B	B

Intersection Summary			
Delay	10.9		
Level of Service	B		
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	3	0	5	58	0	20	0	197	23	51	275	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	5	63	0	22	0	214	25	55	299	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	9	85	239	354
Volume Left (vph)	3	63	0	55
Volume Right (vph)	5	22	25	0
Hadj (s)	-0.27	0.03	-0.03	0.07
Departure Headway (s)	5.1	5.3	4.5	4.5
Degree Utilization, x	0.01	0.12	0.30	0.44
Capacity (veh/h)	606	609	768	777
Control Delay (s)	8.2	9.0	9.5	11.0
Approach Delay (s)	8.2	9.0	9.5	11.0
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	92	50	42	122	208	136
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	100	54	46	133	226	148
Pedestrians	2			26	26	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			2	2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	552	328	376			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	552	328	376			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	92	96			
cM capacity (veh/h)	465	697	1181			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	154	178	374
Volume Left	100	46	0
Volume Right	54	0	148
cSH	526	1181	1700
Volume to Capacity	0.29	0.04	0.22
Queue Length 95th (ft)	30	3	0
Control Delay (s)	14.7	2.3	0.0
Lane LOS	B	A	
Approach Delay (s)	14.7	2.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	551	4	31	1101	89	5	24	37	125	24	139
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1489	2977		1483	2941			1433			1421	
Flt Permitted	0.16	1.00		0.40	1.00			0.98			0.83	
Satd. Flow (perm)	255	2977		623	2941			1405			1212	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	599	4	34	1197	97	5	26	40	136	26	151
RTOR Reduction (vph)	0	1	0	0	12	0	0	26	0	0	28	0
Lane Group Flow (vph)	58	602	0	34	1282	0	0	45	0	0	285	0
Confl. Peds. (#/hr)	4		7	7		4	8		2	2		8
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.6	24.6		24.6	24.6			17.4			17.4	
Effective Green, g (s)	24.6	24.6		24.6	24.6			17.4			17.4	
Actuated g/C Ratio	0.49	0.49		0.49	0.49			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	125	1464		306	1446			488			421	
v/s Ratio Prot		0.20			c0.44							
v/s Ratio Perm	0.23			0.05				0.03			c0.24	
v/c Ratio	0.46	0.41		0.11	0.89			0.09			0.68	
Uniform Delay, d1	8.4	8.1		6.8	11.4			11.0			13.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.7	0.2		0.2	6.9			0.4			8.5	
Delay (s)	11.1	8.3		7.0	18.4			11.4			22.4	
Level of Service	B	A		A	B			B			C	
Approach Delay (s)		8.5			18.1			11.4			22.4	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	52	10	16	51	0	6	0	33	24	23	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	11	17	55	0	7	0	36	26	25	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	67	73	42	39	31
Volume Left (vph)	0	17	7	26	0
Volume Right (vph)	11	0	36	0	18
Hadj (s)	-0.06	0.08	-0.44	0.37	-0.38
Departure Headway (s)	4.2	4.3	3.9	5.2	4.5
Degree Utilization, x	0.08	0.09	0.05	0.06	0.04
Capacity (veh/h)	835	811	868	661	774
Control Delay (s)	7.5	7.7	7.1	7.3	6.4
Approach Delay (s)	7.5	7.7	7.1	6.9	
Approach LOS	A	A	A	A	

Intersection Summary				
Delay	7.3			
Level of Service	A			
Intersection Capacity Utilization	28.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	829	3	3	643	8	1	1	7	6	0	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	901	3	3	699	9	1	1	8	7	0	28
Pedestrians		10			10			6			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	718			910			1343	1673	467	1225	1667	369
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	718			910			1343	1673	467	1225	1667	369
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	95	100	95
cM capacity (veh/h)	872			740			101	91	536	125	92	617

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	321	601	3	236	466	9	10	35
Volume Left	21	0	0	3	0	0	1	7
Volume Right	0	0	3	0	0	9	8	28
cSH	872	1700	1700	740	1700	1700	265	356
Volume to Capacity	0.02	0.35	0.00	0.00	0.27	0.01	0.04	0.10
Queue Length 95th (ft)	2	0	0	0	0	0	3	8
Control Delay (s)	0.8	0.0	0.0	0.2	0.0	0.0	19.1	16.2
Lane LOS	A			A			C	C
Approach Delay (s)	0.3			0.1			19.1	16.2
Approach LOS							C	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
5: DEL VALLE AV & AMAR RD

7/22/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1200	93	115	914	100	153
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.90	1.00	1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1202	1490	2980	1362	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1202	1490	2980	1362	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1304	101	125	993	109	166
RTOR Reduction (vph)	0	57	0	0	92	0
Lane Group Flow (vph)	1304	44	125	993	183	0
Confl. Peds. (#/hr)		41	41		41	41
Confl. Bikes (#/hr)		4				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	520	124	1738	385	
v/s Ratio Prot	c0.44		c0.08	0.33	c0.13	
v/s Ratio Perm		0.04				
v/c Ratio	1.01	0.08	1.01	0.57	0.48	
Uniform Delay, d1	17.0	10.0	27.5	7.8	17.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.5	0.1	83.0	0.5	4.2	
Delay (s)	44.5	10.1	110.5	8.3	22.0	
Level of Service	D	B	F	A	C	
Approach Delay (s)	42.1			19.7	22.0	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	30	39	17	9	67	24	130	12	70	131	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	33	42	18	10	73	26	141	13	76	142	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	113	101	180	248
Volume Left (vph)	38	18	26	76
Volume Right (vph)	42	73	13	29
Hadj (s)	-0.12	-0.36	0.02	0.02
Departure Headway (s)	5.0	4.7	4.8	4.7
Degree Utilization, x	0.16	0.13	0.24	0.32
Capacity (veh/h)	657	682	712	727
Control Delay (s)	8.9	8.5	9.3	9.9
Approach Delay (s)	8.9	8.5	9.3	9.9
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.3		
Level of Service	A		
Intersection Capacity Utilization	48.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	0	22	0	12	0	135	14	35	170	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	24	0	13	0	147	15	38	185	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	2	37	162	224
Volume Left (vph)	2	24	0	38
Volume Right (vph)	0	13	15	1
Hadj (s)	0.23	-0.05	-0.02	0.07
Departure Headway (s)	5.0	4.7	4.2	4.2
Degree Utilization, x	0.00	0.05	0.19	0.26
Capacity (veh/h)	652	700	835	839
Control Delay (s)	8.0	7.9	8.2	8.7
Approach Delay (s)	8.0	7.9	8.2	8.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.4		
Level of Service	A		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	54	33	23	100	111	80
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	36	25	109	121	87
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	339	180	208			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	339	180	208			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	96	98			
cM capacity (veh/h)	636	851	1363			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	95	134	208
Volume Left	59	25	0
Volume Right	36	0	87
cSH	704	1363	1700
Volume to Capacity	0.13	0.02	0.12
Queue Length 95th (ft)	12	1	0
Control Delay (s)	10.9	1.6	0.0
Lane LOS	B	A	
Approach Delay (s)	10.9	1.6	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	39.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	66	759	9	19	575	70	4	18	18	61	18	76
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.94			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1483	2974		1486	2920			1452			1421	
Flt Permitted	0.32	1.00		0.25	1.00			0.98			0.89	
Satd. Flow (perm)	494	2974		387	2920			1433			1289	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	825	10	21	625	76	4	20	20	66	20	83
RTOR Reduction (vph)	0	2	0	0	22	0	0	11	0	0	47	0
Lane Group Flow (vph)	72	833	0	21	679	0	0	33	0	0	122	0
Confl. Peds. (#/hr)	8		6	6		8	8		8	6		6
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	23.3	23.3		23.3	23.3			23.7			23.7	
Effective Green, g (s)	23.3	23.3		23.3	23.3			23.7			23.7	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.43			0.43	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	209	1259		163	1237			617			555	
v/s Ratio Prot		c0.28			0.23							
v/s Ratio Perm	0.15			0.05				0.02			c0.09	
v/c Ratio	0.34	0.66		0.13	0.55			0.05			0.22	
Uniform Delay, d1	10.7	12.7		9.7	11.9			9.1			9.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.3		0.4	0.5			0.2			0.9	
Delay (s)	11.7	14.0		10.0	12.4			9.3			10.7	
Level of Service	B	B		B	B			A			B	
Approach Delay (s)		13.8			12.3			9.3			10.7	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/22/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	21	49	1451	66	110	995
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	53	1577	72	120	1082
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2389	821			1665	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2389	821			1665	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	83			68	
cM capacity (veh/h)	19	309			377	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	76	789	789	72	120	541	541
Volume Left	23	0	0	0	120	0	0
Volume Right	53	0	0	72	0	0	0
cSH	55	1700	1700	1700	377	1700	1700
Volume to Capacity	1.39	0.46	0.46	0.04	0.32	0.32	0.32
Queue Length 95th (ft)	171	0	0	0	33	0	0
Control Delay (s)	378.1	0.0	0.0	0.0	18.9	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	378.1	0.0			1.9		
Approach LOS	F						

Intersection Summary			
Average Delay	10.6		
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	37	393	22	52	398
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	15	40	427	24	57	433
Pedestrians	1		1			1
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	759	216			452	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	759	216			452	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	95			95	
cM capacity (veh/h)	325	788			1104	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	55	214	214	24	201	288
Volume Left	15	0	0	0	57	0
Volume Right	40	0	0	24	0	0
cSH	566	1700	1700	1700	1104	1700
Volume to Capacity	0.10	0.13	0.13	0.01	0.05	0.17
Queue Length 95th (ft)	8	0	0	0	4	0
Control Delay (s)	12.0	0.0	0.0	0.0	2.7	0.0
Lane LOS	B				A	
Approach Delay (s)	12.0	0.0			1.1	
Approach LOS	B					

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	62	5	10	39	0	7	0	27	25	16	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	67	5	11	42	0	8	0	29	27	17	12

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	73	53	37	36	21
Volume Left (vph)	0	11	8	27	0
Volume Right (vph)	5	0	29	0	12
Hadj (s)	-0.01	0.07	-0.40	0.41	-0.37
Departure Headway (s)	4.2	4.3	3.9	5.2	4.4
Degree Utilization, x	0.08	0.06	0.04	0.05	0.03
Capacity (veh/h)	841	821	873	662	780
Control Delay (s)	7.5	7.5	7.1	7.3	6.3
Approach Delay (s)	7.5	7.5	7.1	7.0	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.3		
Level of Service	A		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1366	4	2	622	11	2	0	7	7	1	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	1485	4	2	676	12	2	0	8	8	1	18
Pedestrians		4			4			1			4	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	692			1490			1879	2210	747	1467	2203	346
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	692			1490			1879	2210	747	1467	2203	346
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			95	100	98	91	97	97
cM capacity (veh/h)	896			446			41	42	354	85	43	646

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	509	990	4	228	451	12	10	27
Volume Left	14	0	0	2	0	0	2	8
Volume Right	0	0	4	0	0	12	8	18
cSH	896	1700	1700	446	1700	1700	130	190
Volume to Capacity	0.02	0.58	0.00	0.00	0.27	0.01	0.08	0.14
Queue Length 95th (ft)	1	0	0	0	0	0	6	12
Control Delay (s)	0.4	0.0	0.0	0.2	0.0	0.0	34.8	27.1
Lane LOS	A			A			D	D
Approach Delay (s)	0.2			0.1			34.8	27.1
Approach LOS							D	D

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1227	97	115	918	102	164
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1293	1490	2980	1398	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1293	1490	2980	1398	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1334	105	125	998	111	178
RTOR Reduction (vph)	0	60	0	0	96	0
Lane Group Flow (vph)	1334	46	125	998	193	0
Confl. Peds. (#/hr)		4	4		23	
Confl. Bikes (#/hr)		3				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	560	124	1738	396	
v/s Ratio Prot	c0.45		c0.08	0.33	c0.14	
v/s Ratio Perm		0.04				
v/c Ratio	1.03	0.08	1.01	0.57	0.49	
Uniform Delay, d1	17.0	10.0	27.5	7.8	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	34.0	0.1	83.0	0.5	4.2	
Delay (s)	51.0	10.0	110.5	8.3	22.1	
Level of Service	D	B	F	A	C	
Approach Delay (s)	48.0			19.7	22.1	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	51	38	27	10	12	39	21	170	7	52	118	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	41	29	11	13	42	23	185	8	57	128	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	126	66	215	201
Volume Left (vph)	55	11	23	57
Volume Right (vph)	29	42	8	16
Hadj (s)	-0.02	-0.32	0.03	0.04
Departure Headway (s)	5.0	4.8	4.7	4.7
Degree Utilization, x	0.17	0.09	0.28	0.26
Capacity (veh/h)	661	675	733	725
Control Delay (s)	9.0	8.2	9.5	9.4
Approach Delay (s)	9.0	8.2	9.5	9.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.2		
Level of Service	A		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	0	0	18	0	20	2	177	26	29	130	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	0	0	20	0	22	2	192	28	32	141	2

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	2	41	223	175
Volume Left (vph)	2	20	2	32
Volume Right (vph)	0	22	28	2
Hadj (s)	0.23	-0.19	-0.04	0.06
Departure Headway (s)	5.1	4.6	4.1	4.3
Degree Utilization, x	0.00	0.05	0.26	0.21
Capacity (veh/h)	647	715	848	813
Control Delay (s)	8.1	7.8	8.6	8.4
Approach Delay (s)	8.1	7.8	8.6	8.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.4		
Level of Service	A		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	55	11	18	157	97	48
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	60	12	20	171	105	52
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	357	148	158			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	357	148	158			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	99	99			
cM capacity (veh/h)	624	887	1422			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	72	190	158
Volume Left	60	20	0
Volume Right	12	0	52
cSH	656	1422	1700
Volume to Capacity	0.11	0.01	0.09
Queue Length 95th (ft)	9	1	0
Control Delay (s)	11.2	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	11.2	0.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	114	1274	11	15	572	64	3	16	27	44	15	64
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1482	2977		1490	2924			1421			1428	
Flt Permitted	0.36	1.00		0.13	1.00			0.99			0.90	
Satd. Flow (perm)	561	2977		207	2924			1408			1303	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	1385	12	16	622	70	3	17	29	48	16	70
RTOR Reduction (vph)	0	1	0	0	16	0	0	20	0	0	49	0
Lane Group Flow (vph)	124	1396	0	16	676	0	0	29	0	0	85	0
Confl. Peds. (#/hr)	9					9			9	9		
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.3	30.3		30.3	30.3			16.7			16.7	
Effective Green, g (s)	30.3	30.3		30.3	30.3			16.7			16.7	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.30			0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	309	1640		114	1610			427			395	
v/s Ratio Prot		c0.47			0.23							
v/s Ratio Perm	0.22			0.08				0.02			c0.07	
v/c Ratio	0.40	0.85		0.14	0.42			0.07			0.22	
Uniform Delay, d1	7.1	10.4		6.0	7.2			13.6			14.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	4.5		0.6	0.2			0.3			1.2	
Delay (s)	8.0	14.9		6.6	7.4			13.9			15.5	
Level of Service	A	B		A	A			B			B	
Approach Delay (s)		14.4			7.4			13.9			15.5	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

FUTURE
EXISTING + AMBIENT + CUMULATIVE PROJECTS + PROJECT
TRAFFIC CONDITIONS

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/22/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	32	61	1201	40	53	1147
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	66	1305	43	58	1247
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2076	685			1365	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2076	685			1365	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	13	83			88	
cM capacity (veh/h)	40	380			493	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	101	653	653	43	58	623	623
Volume Left	35	0	0	0	58	0	0
Volume Right	66	0	0	43	0	0	0
cSH	96	1700	1700	1700	493	1700	1700
Volume to Capacity	1.05	0.38	0.38	0.03	0.12	0.37	0.37
Queue Length 95th (ft)	161	0	0	0	10	0	0
Control Delay (s)	186.5	0.0	0.0	0.0	13.3	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	186.5	0.0			0.6		
Approach LOS	F						

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	50	101	430	30	52	326
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	110	467	33	57	354
Pedestrians	3		3			3
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	764	240			503	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764	240			503	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	86			95	
cM capacity (veh/h)	320	758			1055	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	164	234	234	33	175	236
Volume Left	54	0	0	0	57	0
Volume Right	110	0	0	33	0	0
cSH	522	1700	1700	1700	1055	1700
Volume to Capacity	0.31	0.14	0.14	0.02	0.05	0.14
Queue Length 95th (ft)	33	0	0	0	4	0
Control Delay (s)	15.0	0.0	0.0	0.0	3.1	0.0
Lane LOS	C				A	
Approach Delay (s)	15.0	0.0			1.3	
Approach LOS	C					

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	85	6	20	80	0	11	0	73	71	50	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	92	7	22	87	0	12	0	79	77	54	53

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	100	109	91	104	80
Volume Left (vph)	1	22	12	77	0
Volume Right (vph)	7	0	79	0	53
Hadj (s)	0.00	0.07	-0.46	0.40	-0.43
Departure Headway (s)	4.7	4.8	4.3	5.5	4.7
Degree Utilization, x	0.13	0.14	0.11	0.16	0.10
Capacity (veh/h)	715	708	789	624	734
Control Delay (s)	8.4	8.6	7.8	8.3	7.0
Approach Delay (s)	8.4	8.6	7.8	7.8	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	8.1		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	574	3	8	1229	4	1	2	12	12	3	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	624	3	9	1336	4	1	2	13	13	3	40
Pedestrians		7			7			7			7	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	1347			634			1413	2043	326	1741	2042	682
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1347			634			1413	2043	326	1741	2042	682
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			99			99	96	98	74	94	90
cM capacity (veh/h)	504			939			78	52	662	49	52	388

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	232	416	3	454	891	4	16	57
Volume Left	24	0	0	9	0	0	1	13
Volume Right	0	0	3	0	0	4	13	40
cSH	504	1700	1700	939	1700	1700	216	131
Volume to Capacity	0.05	0.24	0.00	0.01	0.52	0.00	0.08	0.43
Queue Length 95th (ft)	4	0	0	1	0	0	6	47
Control Delay (s)	1.9	0.0	0.0	0.3	0.0	0.0	23.0	51.7
Lane LOS	A			A			C	F
Approach Delay (s)	0.7			0.1			23.0	51.7
Approach LOS							C	F

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	798	125	135	1409	190	127
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.95	
Flt Protected	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (prot)	2980	1294	1490	2980	1433	
Flt Permitted	1.00	1.00	0.95	1.00	0.97	
Satd. Flow (perm)	2980	1294	1490	2980	1433	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	867	136	147	1532	207	138
RTOR Reduction (vph)	0	86	0	0	40	0
Lane Group Flow (vph)	867	50	147	1532	305	0
Confl. Peds. (#/hr)		3	3		35	
Confl. Bikes (#/hr)		4				1
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	21.9	21.9	7.9	33.8	18.2	
Effective Green, g (s)	21.9	21.9	7.9	33.8	18.2	
Actuated g/C Ratio	0.36	0.36	0.13	0.56	0.30	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1087	472	196	1678	434	
v/s Ratio Prot	0.29		0.10	c0.51	c0.21	
v/s Ratio Perm		0.04				
v/c Ratio	0.80	0.11	0.75	0.91	0.70	
Uniform Delay, d1	17.1	12.6	25.1	11.8	18.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.2	0.1	14.8	8.0	9.2	
Delay (s)	21.2	12.7	39.9	19.8	27.7	
Level of Service	C	B	D	B	C	
Approach Delay (s)	20.1			21.5	27.7	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	18	26	59	43	26	128	28	160	10	52	221	19
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	28	64	47	28	139	30	174	11	57	240	21

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	112	214	215	317
Volume Left (vph)	20	47	30	57
Volume Right (vph)	64	139	11	21
Hadj (s)	-0.27	-0.31	0.03	0.03
Departure Headway (s)	5.4	5.2	5.3	5.2
Degree Utilization, x	0.17	0.31	0.32	0.45
Capacity (veh/h)	580	628	620	658
Control Delay (s)	9.5	10.5	10.8	12.4
Approach Delay (s)	9.5	10.5	10.8	12.4
Approach LOS	A	B	B	B

Intersection Summary			
Delay	11.1		
Level of Service	B		
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	15	0	10	58	0	20	4	197	23	51	275	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	0	11	63	0	22	4	214	25	55	299	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	27	85	243	360
Volume Left (vph)	16	63	4	55
Volume Right (vph)	11	22	25	5
Hadj (s)	-0.09	0.03	-0.02	0.06
Departure Headway (s)	5.4	5.4	4.6	4.6
Degree Utilization, x	0.04	0.13	0.31	0.45
Capacity (veh/h)	584	598	752	765
Control Delay (s)	8.6	9.1	9.7	11.3
Approach Delay (s)	8.6	9.1	9.7	11.3
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.4		
Level of Service	B		
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	94	50	42	124	210	139
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	102	54	46	135	228	151
Pedestrians	2			26	26	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	0			2	2	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	558	332	381			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	558	332	381			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	92	96			
cM capacity (veh/h)	461	693	1175			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	157	180	379
Volume Left	102	46	0
Volume Right	54	0	151
cSH	522	1175	1700
Volume to Capacity	0.30	0.04	0.22
Queue Length 95th (ft)	31	3	0
Control Delay (s)	14.8	2.3	0.0
Lane LOS	B	A	
Approach Delay (s)	14.8	2.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	551	4	31	1101	90	5	24	37	125	24	141
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.99			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1489	2977		1483	2940			1433			1420	
Flt Permitted	0.16	1.00		0.40	1.00			0.98			0.84	
Satd. Flow (perm)	255	2977		623	2940			1405			1212	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	599	4	34	1197	98	5	26	40	136	26	153
RTOR Reduction (vph)	0	1	0	0	12	0	0	26	0	0	28	0
Lane Group Flow (vph)	59	602	0	34	1283	0	0	45	0	0	287	0
Confl. Peds. (#/hr)	4		7	7		4	8		2	2		8
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.6	24.6		24.6	24.6			17.4			17.4	
Effective Green, g (s)	24.6	24.6		24.6	24.6			17.4			17.4	
Actuated g/C Ratio	0.49	0.49		0.49	0.49			0.35			0.35	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	125	1464		306	1446			488			421	
v/s Ratio Prot		0.20			c0.44							
v/s Ratio Perm	0.23			0.05				0.03			c0.24	
v/c Ratio	0.47	0.41		0.11	0.89			0.09			0.68	
Uniform Delay, d1	8.4	8.1		6.8	11.4			11.0			13.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	2.8	0.2		0.2	7.0			0.4			8.6	
Delay (s)	11.2	8.3		7.0	18.4			11.4			22.6	
Level of Service	B	A		A	B			B			C	
Approach Delay (s)		8.5			18.1			11.4			22.6	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
3: 5TH STREET & SIERRA VISTA

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	58	10	16	54	0	6	0	33	24	23	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	63	11	17	59	0	7	0	36	26	25	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	74	76	42	39	31
Volume Left (vph)	0	17	7	26	0
Volume Right (vph)	11	0	36	0	18
Hadj (s)	-0.05	0.08	-0.44	0.37	-0.38
Departure Headway (s)	4.2	4.3	4.0	5.2	4.5
Degree Utilization, x	0.09	0.09	0.05	0.06	0.04
Capacity (veh/h)	833	810	861	657	769
Control Delay (s)	7.6	7.7	7.2	7.4	6.5
Approach Delay (s)	7.6	7.7	7.2	7.0	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	29.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
4: 5TH STREET & TEMPLE AV

7/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	831	3	3	645	8	1	1	7	6	0	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	903	3	3	701	9	1	1	8	7	0	28
Pedestrians		10			10			6			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		1			1			1			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	720			913			1346	1677	468	1229	1671	371
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	720			913			1346	1677	468	1229	1671	371
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			99	99	99	95	100	95
cM capacity (veh/h)	870			739			100	90	535	125	91	616

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	322	602	3	237	467	9	10	35
Volume Left	21	0	0	3	0	0	1	7
Volume Right	0	0	3	0	0	9	8	28
cSH	870	1700	1700	739	1700	1700	264	354
Volume to Capacity	0.02	0.35	0.00	0.00	0.27	0.01	0.04	0.10
Queue Length 95th (ft)	2	0	0	0	0	0	3	8
Control Delay (s)	0.8	0.0	0.0	0.2	0.0	0.0	19.2	16.3
Lane LOS	A			A			C	C
Approach Delay (s)	0.3			0.1			19.2	16.3
Approach LOS							C	C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
5: DEL VALLE AV & AMAR RD

7/8/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1200	104	118	914	104	154
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.90	1.00	1.00	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1202	1490	2980	1363	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1202	1490	2980	1363	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1304	113	128	993	113	167
RTOR Reduction (vph)	0	64	0	0	89	0
Lane Group Flow (vph)	1304	49	128	993	191	0
Confl. Peds. (#/hr)		41	41		41	41
Confl. Bikes (#/hr)		4				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	520	124	1738	386	
v/s Ratio Prot	c0.44		c0.09	0.33	c0.14	
v/s Ratio Perm		0.04				
v/c Ratio	1.01	0.09	1.03	0.57	0.50	
Uniform Delay, d1	17.0	10.0	27.5	7.8	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	27.5	0.1	89.7	0.5	4.5	
Delay (s)	44.5	10.1	117.2	8.3	22.4	
Level of Service	D	B	F	A	C	
Approach Delay (s)	41.8			20.7	22.4	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: DEL VALLE AV & LOUKELTON ST

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	30	41	17	9	67	26	136	12	70	144	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	38	33	45	18	10	73	28	148	13	76	157	29

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	115	101	189	262
Volume Left (vph)	38	18	28	76
Volume Right (vph)	45	73	13	29
Hadj (s)	-0.13	-0.36	0.02	0.02
Departure Headway (s)	5.0	4.8	4.8	4.7
Degree Utilization, x	0.16	0.13	0.25	0.34
Capacity (veh/h)	648	670	707	723
Control Delay (s)	9.0	8.6	9.4	10.2
Approach Delay (s)	9.0	8.6	9.4	10.2
Approach LOS	A	A	A	B

Intersection Summary			
Delay	9.5		
Level of Service	A		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
7: MENTZ ST & DEL VALLE AV

7/8/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	0	7	22	0	12	9	135	14	35	170	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	8	24	0	13	10	147	15	38	185	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	18	37	172	240
Volume Left (vph)	11	24	10	38
Volume Right (vph)	8	13	15	17
Hadj (s)	-0.10	-0.05	-0.01	0.02
Departure Headway (s)	4.8	4.8	4.3	4.2
Degree Utilization, x	0.02	0.05	0.20	0.28
Capacity (veh/h)	684	684	818	824
Control Delay (s)	7.9	8.0	8.4	8.9
Approach Delay (s)	7.9	8.0	8.4	8.9
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.6		
Level of Service	A		
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
8: DEL VALLE AV & SIERRA VISTA

7/8/2016

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	60	33	23	103	115	83
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	36	25	112	125	90
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	348	186	215			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	348	186	215			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	96	98			
cM capacity (veh/h)	628	845	1355			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	101	137	215
Volume Left	65	25	0
Volume Right	36	0	90
cSH	691	1355	1700
Volume to Capacity	0.15	0.02	0.13
Queue Length 95th (ft)	13	1	0
Control Delay (s)	11.1	1.5	0.0
Lane LOS	B	A	
Approach Delay (s)	11.1	1.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	759	9	19	575	71	4	18	18	63	18	78
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.94			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1483	2974		1486	2920			1452			1420	
Flt Permitted	0.32	1.00		0.25	1.00			0.98			0.89	
Satd. Flow (perm)	493	2974		387	2920			1433			1287	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	825	10	21	625	77	4	20	20	68	20	85
RTOR Reduction (vph)	0	2	0	0	23	0	0	11	0	0	48	0
Lane Group Flow (vph)	74	833	0	21	679	0	0	33	0	0	125	0
Confl. Peds. (#/hr)	8		6	6		8	8		8	6		6
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	23.3	23.3		23.3	23.3			23.7			23.7	
Effective Green, g (s)	23.3	23.3		23.3	23.3			23.7			23.7	
Actuated g/C Ratio	0.42	0.42		0.42	0.42			0.43			0.43	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	208	1259		163	1237			617			554	
v/s Ratio Prot		c0.28			0.23							
v/s Ratio Perm	0.15			0.05				0.02			c0.10	
v/c Ratio	0.36	0.66		0.13	0.55			0.05			0.22	
Uniform Delay, d1	10.8	12.7		9.7	11.9			9.1			9.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.0	1.3		0.4	0.5			0.2			0.9	
Delay (s)	11.8	14.0		10.0	12.4			9.3			10.8	
Level of Service	B	B		B	B			A			B	
Approach Delay (s)		13.8			12.3			9.3			10.8	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
1: HACIENDA BL & LOUKELTON ST

7/22/2016

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	21	52	1451	68	110	997
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	23	57	1577	74	120	1084
Pedestrians	16		16			16
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		1			1
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			268			440
pX, platoon unblocked						
vC, conflicting volume	2390	821			1667	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2390	821			1667	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	82			68	
cM capacity (veh/h)	19	309			377	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	79	789	789	74	120	542	542
Volume Left	23	0	0	0	120	0	0
Volume Right	57	0	0	74	0	0	0
cSH	57	1700	1700	1700	377	1700	1700
Volume to Capacity	1.40	0.46	0.46	0.04	0.32	0.32	0.32
Queue Length 95th (ft)	176	0	0	0	34	0	0
Control Delay (s)	378.3	0.0	0.0	0.0	18.9	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	378.3	0.0			1.9		
Approach LOS	F						

Intersection Summary			
Average Delay	11.0		
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	37	393	28	52	398
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	40	427	30	57	433
Pedestrians	1		1			1
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	0		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			690			955
pX, platoon unblocked						
vC, conflicting volume	759	216			459	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	759	216			459	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	95			95	
cM capacity (veh/h)	325	788			1098	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	59	214	214	30	201	288
Volume Left	18	0	0	0	57	0
Volume Right	40	0	0	30	0	0
cSH	544	1700	1700	1700	1098	1700
Volume to Capacity	0.11	0.13	0.13	0.02	0.05	0.17
Queue Length 95th (ft)	9	0	0	0	4	0
Control Delay (s)	12.4	0.0	0.0	0.0	2.7	0.0
Lane LOS	B				A	
Approach Delay (s)	12.4	0.0			1.1	
Approach LOS	B					

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	68	5	10	42	0	7	0	27	25	16	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	74	5	11	46	0	8	0	29	27	17	12

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total (vph)	79	57	37	36	21
Volume Left (vph)	0	11	8	27	0
Volume Right (vph)	5	0	29	0	12
Hadj (s)	-0.01	0.07	-0.40	0.41	-0.37
Departure Headway (s)	4.2	4.3	4.0	5.2	4.5
Degree Utilization, x	0.09	0.07	0.04	0.05	0.03
Capacity (veh/h)	840	820	865	658	775
Control Delay (s)	7.6	7.6	7.1	7.3	6.4
Approach Delay (s)	7.6	7.6	7.1	7.0	
Approach LOS	A	A	A	A	

Intersection Summary			
Delay	7.4		
Level of Service	A		
Intersection Capacity Utilization	27.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	1368	4	2	624	11	2	0	7	7	1	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	1487	4	2	678	12	2	0	8	8	1	18
Pedestrians		4			4			1			4	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		726										
pX, platoon unblocked												
vC, conflicting volume	694			1492			1883	2215	748	1470	2207	347
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	694			1492			1883	2215	748	1470	2207	347
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			95	100	98	91	97	97
cM capacity (veh/h)	894			446			40	42	353	85	43	645

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	510	991	4	228	452	12	10	27
Volume Left	14	0	0	2	0	0	2	8
Volume Right	0	0	4	0	0	12	8	18
cSH	894	1700	1700	446	1700	1700	130	189
Volume to Capacity	0.02	0.58	0.00	0.00	0.27	0.01	0.08	0.14
Queue Length 95th (ft)	1	0	0	0	0	0	6	12
Control Delay (s)	0.4	0.0	0.0	0.2	0.0	0.0	35.0	27.3
Lane LOS	A			A			D	D
Approach Delay (s)	0.2			0.1			35.0	27.3
Approach LOS							D	D

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
5: DEL VALLE AV & AMAR RD

7/22/2016

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1227	108	118	918	106	165
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	
Frpb, ped/bikes	1.00	0.97	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.92	
Flt Protected	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (prot)	2980	1293	1490	2980	1399	
Flt Permitted	1.00	1.00	0.95	1.00	0.98	
Satd. Flow (perm)	2980	1293	1490	2980	1399	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1334	117	128	998	115	179
RTOR Reduction (vph)	0	66	0	0	93	0
Lane Group Flow (vph)	1334	51	128	998	201	0
Confl. Peds. (#/hr)		4	4		23	
Confl. Bikes (#/hr)		3				4
Turn Type	NA	Perm	Prot	NA	Prot	
Protected Phases	4		3	8	2	
Permitted Phases		4				
Actuated Green, G (s)	26.0	26.0	5.0	35.0	17.0	
Effective Green, g (s)	26.0	26.0	5.0	35.0	17.0	
Actuated g/C Ratio	0.43	0.43	0.08	0.58	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1291	560	124	1738	396	
v/s Ratio Prot	c0.45		c0.09	0.33	c0.14	
v/s Ratio Perm		0.04				
v/c Ratio	1.03	0.09	1.03	0.57	0.51	
Uniform Delay, d1	17.0	10.0	27.5	7.8	18.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	34.0	0.1	89.7	0.5	4.6	
Delay (s)	51.0	10.1	117.2	8.3	22.6	
Level of Service	D	B	F	A	C	
Approach Delay (s)	47.7			20.7	22.6	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	51	38	29	10	12	39	23	176	7	52	131	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	41	32	11	13	42	25	191	8	57	142	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	128	66	224	215
Volume Left (vph)	55	11	25	57
Volume Right (vph)	32	42	8	16
Hadj (s)	-0.03	-0.32	0.04	0.04
Departure Headway (s)	5.0	4.8	4.7	4.7
Degree Utilization, x	0.18	0.09	0.29	0.28
Capacity (veh/h)	652	663	728	722
Control Delay (s)	9.1	8.3	9.6	9.6
Approach Delay (s)	9.1	8.3	9.6	9.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay	9.4		
Level of Service	A		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	0	7	18	0	20	11	177	26	29	130	17
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	0	8	20	0	22	12	192	28	32	141	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	18	41	233	191
Volume Left (vph)	11	20	12	32
Volume Right (vph)	8	22	28	18
Hadj (s)	-0.10	-0.19	-0.03	0.01
Departure Headway (s)	4.8	4.7	4.2	4.3
Degree Utilization, x	0.02	0.05	0.27	0.23
Capacity (veh/h)	677	699	832	810
Control Delay (s)	7.9	7.9	8.8	8.6
Approach Delay (s)	7.9	7.9	8.8	8.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.6		
Level of Service	A		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	61	11	18	160	101	51
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	12	20	174	110	55
Pedestrians				16	16	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				4.0	4.0	
Percent Blockage				1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				677		
pX, platoon unblocked						
vC, conflicting volume	367	154	165			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	367	154	165			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	99	99			
cM capacity (veh/h)	616	881	1413			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	78	193	165
Volume Left	66	20	0
Volume Right	12	0	55
cSH	646	1413	1700
Volume to Capacity	0.12	0.01	0.10
Queue Length 95th (ft)	10	1	0
Control Delay (s)	11.3	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	11.3	0.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
9: TEMPLE & DEL VALLE AV

7/22/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	1274	11	15	572	65	3	16	27	46	15	66
Ideal Flow (vphpl)	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			0.99			1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.98			0.92			0.93	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.98	
Satd. Flow (prot)	1482	2977		1490	2923			1421			1428	
Flt Permitted	0.36	1.00		0.13	1.00			0.99			0.89	
Satd. Flow (perm)	560	2977		207	2923			1408			1300	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	1385	12	16	622	71	3	17	29	50	16	72
RTOR Reduction (vph)	0	1	0	0	16	0	0	20	0	0	50	0
Lane Group Flow (vph)	126	1396	0	16	677	0	0	29	0	0	88	0
Confl. Peds. (#/hr)	9					9			9	9		
Confl. Bikes (#/hr)						3						
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.3	30.3		30.3	30.3			16.7			16.7	
Effective Green, g (s)	30.3	30.3		30.3	30.3			16.7			16.7	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.30			0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	308	1640		114	1610			427			394	
v/s Ratio Prot		c0.47			0.23							
v/s Ratio Perm	0.23			0.08				0.02			c0.07	
v/c Ratio	0.41	0.85		0.14	0.42			0.07			0.22	
Uniform Delay, d1	7.2	10.4		6.0	7.2			13.6			14.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	4.5		0.6	0.2			0.3			1.3	
Delay (s)	8.0	14.9		6.6	7.4			13.9			15.6	
Level of Service	A	B		A	A			B			B	
Approach Delay (s)		14.4			7.4			13.9			15.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			