1300 FLORENCE AVENUE CAR WASH PROJECT TRAFFIC IMPACT ANALYSIS

City of Huntington Park

September 8, 2021

Traffic Engineering ● Transportation Planning ● Parking ● Noise & Vibration
Air Quality ● Global Climate Change ● Health Risk Assessment

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prepared by

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EXECUTIVE SUMMARY

The purpose of this Traffic Impact Analysis is to provide an assessment of traffic operations resulting from development of the proposed 3100 Florence Avenue Car Wash Project and to identify measures necessary to mitigate potentially operational deficiency, if any. This report analyzes traffic impacts for the anticipated project opening year in Year 2023.

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

PROJECT DESCRIPTION

The project site is located at 3100 Florence Avenue in the City of Huntington Park. The project site is located south side of Florence Avenue at the southern end of Mission Place between Mountain View Avenue and State Street. The project site is currently occupied with an 11,000 square foot medical office building, and it currently has a signalized full access driveway via the south leg of the intersection of Mission Place at Florence Avenue.

The proposed project involves construction of a 4,712 square foot car wash with a car wash tunnel. The proposed drive-through lane configuration provides queueing storage for three vehicles from the car wash tunnel entrance to the pay stations and barrier arm gates plus storage for another nine vehicles from the pay stations to the entrance of the car wash drive-through lane for a total storage of approximately 12 vehicles. There will be a drying area with 29 parking stalls that are equipped with vacuum posts for vehicle interior cleaning and drying the vehicle exterior after the vehicles have traveled through the wash tunnel, two accessible parking stalls and two employee parking stalls for a total of 33 parking spaces. There will also be one motorcycle parking stall. The parking lot aisle for the drying area is available to serve as an overflow to accommodate seven additional queueing vehicles to enter the car wash drive-through lane.

The proposed project will retain the existing signalized driveway at the south leg of Mission Place, and the project will provide a new stop-controlled right-turn exit-only driveway on Florence Avenue east of Mission Place. The proposed project is anticipated to be constructed and fully operational by year 2023.

EXISTING TRAFFIC OPERATIONS

The study intersections currently operate within acceptable Levels of Service (D or better) during the peak hours for Existing traffic conditions (see Table 1).

PROJECT TRIPS

The proposed project is forecast to generate a total of approximately net 561 daily vehicle trips, including net 33 vehicle trips during the AM peak hour and net 96 vehicle trips during the PM peak hour.

FORECAST TRAFFIC OPERATIONS

Existing Plus Project Conditions: The study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for Existing Plus Project traffic conditions (see Table 4).

Opening Year (2023) Without Project: The study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2023) Without Project traffic conditions (see Table 5).

Opening Year (2023) With Project: The study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2023) With Project traffic conditions (see Table 6).

The proposed project is forecast to result in no operational deficiency at the study intersections for Opening Year (2023) With Project conditions. No additional off-site intersection mitigation is required.

PARKING

The proposed project requires 29 parking spaces based on City Municipal Code requirements. Since the proposed project provides a drying area with a total of 33 parking spaces (29 vacuum station stalls, two accessible parking stalls and two employee parking stalls), more than adequate parking supply is forecast to be provided with a surplus of four (4) parking spaces based on the City Municipal Code requirements

DRIVE-THROUGH LANE QUEUEING

The typical peak queueing length is estimated to be approximately 18 vehicles during peak periods based on the highest 85th-percentile queue length. Since the proposed project provides a vehicular queue storage capacity for approximately 12 vehicles with the parking lot aisle for the drying area is available to serve as an overflow to accommodate seven additional queueing vehicles for a total of 19 vehicles, the overall drive-through storage capacity for the project site is forecast to be adequate to accommodate the peak queue.

VMT SCREENING

The 4,712 square foot automated car wash project contains less than 50,000 square feet of gross floor area of retail. The proposed car wash is also a local-serving facility. Therefore, it may be presumed that the retail portion of the project has a less than significant impact to vehicle miles traveled (VMT) based on the Transportation Impact Analysis Guidelines established by the County of Los Angeles Department of Public Works.

1. INTRODUCTION

This section describes the purpose of this traffic impact analysis, project location, proposed development, and study area. Figure 1 shows the regional vicinity map, Figure 2 shows the project location map, and Figure 3 illustrates the project site plan.

PURPOSE AND OBJECTIVES

The purpose of this traffic impact analysis is to provide an assessment of traffic operations resulting from development of the proposed 3100 Florence Avenue Car Wash Project and to identify measures necessary to mitigate traffic operational deficiencies. This report analyzes traffic impacts for the anticipated project opening year in 2023.

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

PROJECT DESCRIPTION

The project site is located at 3100 Florence Avenue in the City of Huntington Park. The project site is located south side of Florence Avenue at the southern end of Mission Place between Mountain View Avenue and State Street. The project site is currently occupied with an 11,000 square foot medical office building, and it currently has a signalized full access driveway via the south leg of the intersection of Mission Place at Florence Avenue.

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The proposed project will retain the existing signalized driveway at the south leg of Mission Place, and the project will provide a new stop-controlled right-turn exit-only driveway on Florence Avenue east of Mission Place. The proposed project is anticipated to be constructed and fully operational by year 2023.

STUDY AREA

Based on the study intersections identified in the scoping agreement (Appendix B), the study area consists of the following study intersections within the City of Huntington Park jurisdictions:

Study Intersections			Jurisdiction
1	Mountain View Avenue	Florence Avenue	Huntington Park
2	Mission Place	Florence Avenue	Huntington Park
3	State Street	Florence Avenue	Huntington Park
4	Project East Driveway	Florence Avenue	Huntington Park

The two off-site signalized intersections on Florence Avenue at Mountain View Avenue and State Street were selected as a study area intersection because these two intersections are the nearest signalized intersections located to the west and east of the project site, respectively. The signalized intersection of Mission Place and Florence Avenue is selected as a study area intersection because the south leg of the intersection will serve as the primary access for the project site which will be considered to be Project West Driveway. The new Project East Driveway is included as a study intersection because it is a new project access.

ANALYSIS SCENARIOS

The following scenarios are analyzed during typical weekday morning and evening peak hour conditions as identified on the scoping agreement (Appendix B):

- Existing Conditions
- Existing Plus Project Conditions
- Opening Year (2023) Without Project Conditions
- Opening Year (2023) With Project Conditions

Figure 1
Regional Vicinity

Legend

(#) Study Intersection

(#) Project Driveway

Figure 2
Project Location Map

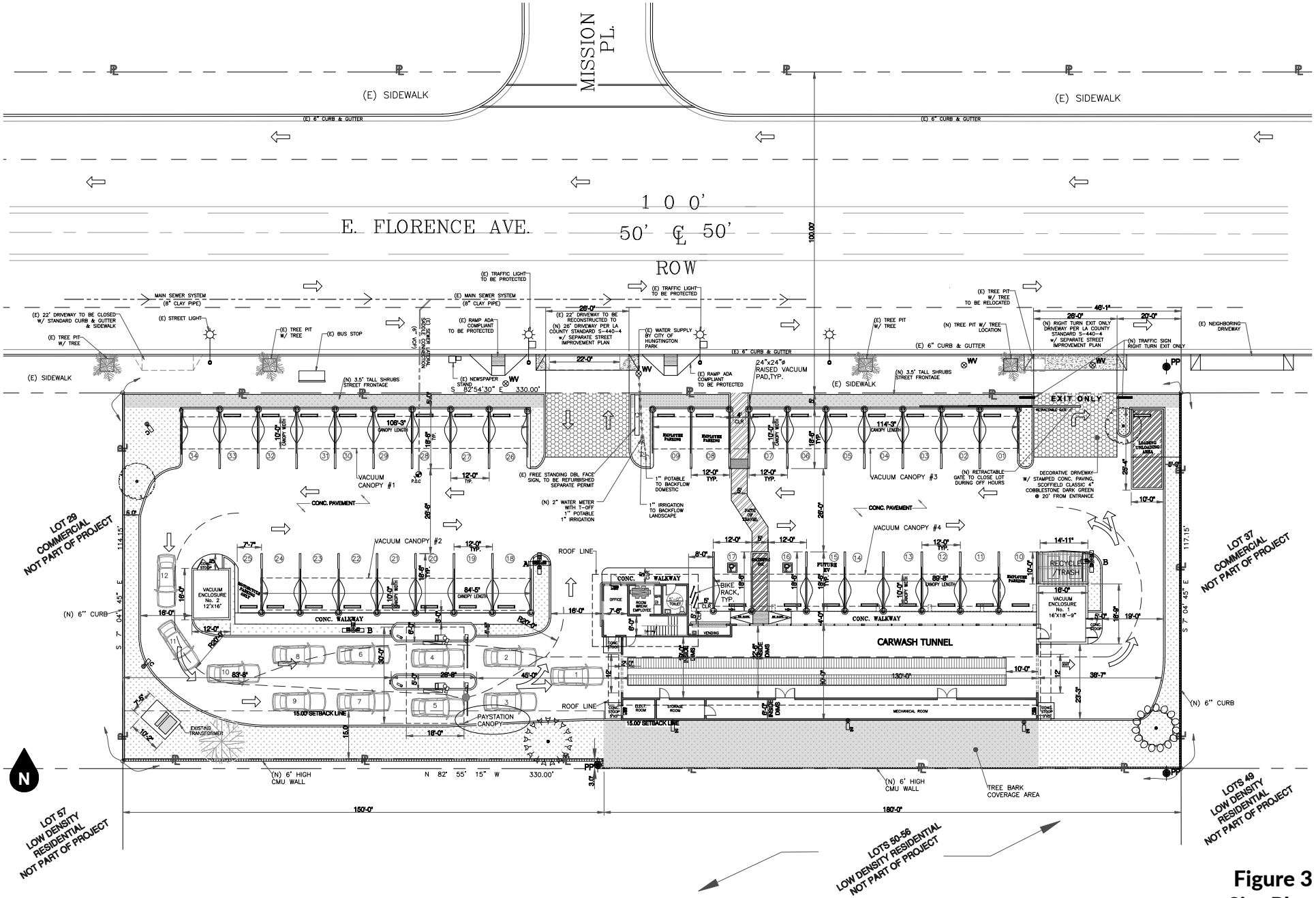


Figure 3
Site Plan

2. METHODOLOGY

This section discusses the analysis methodologies used to assess transportation facility performance as adopted by the respective jurisdictional agencies.

INTERSECTION CAPACITY UTILIZATION METHODOLOGY

Analysis of signalized intersections within the City of Huntington Park is based on the Intersection Capacity Utilization (ICU) methodology. The ICU methodology compares the traffic volume using the intersection to the capacity of the intersection. The resulting volume-to-capacity ratio represents that portion of the total hourly capacity required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

The volume-to-capacity ratio is then correlated to a performance measure known as Level of Service based on the following thresholds:

Level of Service	Volume/Capacity Ratio
A	≤ 0.600
B	0.601 to 0.700
C	0.701 to 0.800
D	0.801 to 0.900
E	0.901 to 1.000
F	> 1.000

Source: Transportation Research Board, Interim Materials on Highway Capacity, Transportation Research Circular No. 212, January 1980.

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). ICU analysis was performed using the Vistro (Version 6.00-00) software.

Based on City of Huntington Park and County of Los Angeles guidelines[1], the ICU analysis utilizes the following parameters: 1,600 vehicles per hour per lane for through and turn lanes, 2,880 vehicles per hour for dual left-turn lanes, and a total clearance adjustment of 10 percent (i.e., 0.10 added to critical Volume/Capacity).

If the paved lane width of a shared through/right turn lane is wide enough to permit a separate right turn, it is common practice for a right turn lane to be considered "de facto." To function as a de facto right turn lane there must be sufficient width for right turning vehicles to travel outside the through lane. This analysis uses a minimum lane width of 19 feet from curb to lane stripe, but in most cases the lane was 20 feet or greater. Additionally, a de facto right turn lane was only considered where on-street parking is prohibited near the intersection approach.

INTERSECTION DELAY METHODOLOGY

The technique used to assess the performance of unsignalized intersections within City of Huntington Park and the California Department of Transportation jurisdiction is known as the intersection delay methodology based on the procedures contained in the Highway Capacity Manual. The methodology compares the traffic volume using the intersection to the capacity of the intersection to calculate the delay associated with the

[1] County of Los Angeles Traffic Impact Analysis (TIA) Report Guidelines; December 2013.

traffic control at the intersection. The intersection delay is then correlated to a performance measure known as Level of Service based on the following thresholds:

Level of Service	Intersection Control Delay (Seconds / Vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Transportation Research Board, Highway Capacity Manual (6th Edition).

Level of Service is used to qualitatively describe the performance of a roadway facility, ranging from Level of Service A (free-flow conditions) to Level of Service F (extreme congestion and system failure). Intersection delay analysis was performed using the Vistro (Version 6.00-00) software.

The Level of Service analysis for signalized intersections has been performed using optimized signal timing. This analysis has included an assumed lost time of two seconds per phase. Traffic signal timing optimization has considered pedestrian safety and signal coordination requirements. Appropriate time for pedestrian crossings has also been considered in the signalized intersection analysis. The following formula has been used to calculate the pedestrian minimum times for all Highway Capacity Manual runs:

(Curb to curb distance) / (3.5 feet/second) + 7 seconds.

Saturation flow rates of 1,800 vehicles per hour of green for through and right turn lanes and 1,700 vehicles per lane for single left turn lanes, 1,600 vehicles per lane for dual left turn lanes, and 1,500 vehicles per lane for triple left turn lanes have been assumed for the capacity analysis.

The peak hour intersection turning movement volumes have been adjusted to peak 15 minute volumes for analysis purposes using the existing observed peak 15 minute to peak hour factors for all scenarios analyzed.

PERFORMANCE STANDARDS

City of Huntington Park / County of Los Angeles. Both the City of Huntington Park and County of Los Angeles have established Level of Service D as the minimum acceptable Level of Service.

California Department of Transportation. As stated in the Guide for the Preparation of Traffic Impact Studies (State of California, 2002), "California Department of Transportation endeavors to maintain a target LOS [Level of Service] at the transition between LOS "C" and LOS "D" on State highway facilities". The California Department of Transportation acknowledges this may not always be feasible and recommends consultation with the California Department of Transportation to determine the appropriate target Level of Service. For consistency with local requirements, this analysis defines Level of Service D as the minimum acceptable Level of Service for State Highway facilities.

THRESHOLDS OF SIGNIFICANCE

For signalized study intersections, the City of Huntington Park General Plan requires that LOS D or better be maintained on Arterial Streets with certain exceptions. As such, intersections operating at LOS E or F will be

considered deficient. A significant impact occurs at a signalized intersection if the addition of Project trips to an intersection that is currently operating at a deficient LOS (i.e., LOS E or F) causes the V/C to increase.

County of Los Angeles jurisdiction use the following table to determine significant impacts by project and identify feasible mitigation measures which would mitigate the project and/or other related projects' significant impacts to a level of insignificance

Pre-Project Conditions		Project Increase in V/C
LOS	V/C	
C	0.71 to 0.80	0.04 or more
D	0.81 to 0.90	0.02 or more
E/F	0.91 or more	0.01 or more

For purposes of determining operational deficiency of the proposed project at unsignalized intersections, the following criteria is provided:

- The project would create an operational deficiency at an intersection if the addition of project-traffic would cause the intersection to operate from LOS D, or better in the baseline (pre-project) condition, to LOS E or F in the plus-project condition. A traffic signal warrant analysis shall be conducted to determine whether a traffic signal is warranted. If a traffic signal is warranted, the City may require the project applicant to pay its fair-share of fees to an applicable program (e.g., DIF, CIP, etc.) for the signalization of the intersection, when warranted.

- If an intersection is operating at LOS E or F in the baseline (pre-project) condition, the project would create an operational deficiency at that intersection if it contributes 10 percent, or more, to the total traffic volume of the impacted peak hour(s). A traffic signal warrant analysis shall be conducted to determine whether a traffic signal is warranted. If a traffic signal is warranted, the City may require the project applicant to pay its fair-share of fees to an applicable program (e.g., DIF, CIP, etc.) for the signalization of the intersection, when warranted.

3. EXISTING CONDITIONS

EXISTING ROADWAY SYSTEM

Figure 4 identifies the lane geometry and intersection traffic controls for Existing conditions based on a field survey of the study area. Regional access to the project area is provided by the Interstate 710 Freeway approximately 2.5 miles east of the project site, Interstate 105 Freeway approximately 3.2 miles south of the project site, Interstate 110 Freeway approximately 3.9 miles west of the project site, and also Interstate 10 Freeway, Interstate 5 and US-101 Freeway approximately 4.0 miles north of the project site. Key roadways providing local circulation include Florence Avenue, Mountain View Avenue and State Street.

PEDESTRIAN FACILITIES

Existing pedestrian facilities in the project vicinity are shown on Figure 5. As shown on Figure 5, pedestrian sidewalks are currently provided along the roadways adjacent to the project site.

BICYCLE ROUTES

The City of Huntington Park Bikeway Master Plan is depicted on Figure 6.

TRANSIT FACILITIES

Figure 7 shows the existing transit routes available in the project vicinity. As shown on Figure 7, bus runs along Hawthorne Boulevard, with bus stops located at 190th Street within 800 feet walking distance from the project site.

GENERAL PLAN CONTEXT

Figure 8 shows the City of Huntington Park General Plan Circulation Element roadway classifications map. This figure shows the nature and extent of arterial and collector highways that are needed to adequately serve the ultimate development depicted by the Land Use Element of the General Plan.

EXISTING TRAFFIC VOLUMES

Existing peak hour traffic conditions are based upon morning peak period and evening peak period intersection turning movement counts obtained in January 2021 during typical weekday conditions. The morning peak period was counted between 7:00 AM and 9:00 AM and the evening peak period was counted between 4:00 PM and 6:00 PM. The actual peak hour within the peak period is the four consecutive 15 minute periods with the highest total volume when all movements are added together. Thus, the weekday evening peak hour at one intersection may be 4:45 PM to 5:45 PM if those four consecutive 15 minute periods have the highest combined volume. Intersection turning movement count worksheets are provided in Appendix C.

Due to the COVID-19 lockdown, current 2021 traffic patterns may not be normalized for an extended period of time. Therefore, it is recommended that the pre-lockdown 2020 base traffic volumes at the study intersections be estimated using a seasonal factor estimated from a comparison of nearby freeway segment volumes between pre-lockdown February 2020 conditions and post-lockdown August 2020 conditions. As anticipated, the post-lockdown August 2020 summer volumes is lower than the pre-lockdown February 2020 volumes. New traffic conducted during January 2021 will be increased using the estimated seasonal factor to estimate the pre-lockdown February 2020 base volumes. Appendix D includes the seasonal factor calculations based on comparison of various I-710 Freeway segments near the study area. As shown in Appendix D, the seasonal factors to convert post-lockdown January 2021 counts to pre-lockdown February 2020 base

volumes are 1.136 for AM peak hour and 1.029 for PM peak hour. To be more conservative, the highest of 3 values for each peak hour for the combined travel directions are selected as the seasonal factors.

Figure 9 shows the Existing average daily traffic volumes. The Existing average daily traffic volumes have been factored from peak hour intersection turning movement volumes using the following formula for each intersection leg:

Evening Peak Hour (Approach Volume + Exit Volume) x 12[2] = Leg Volume.

Figure 10 and Figure 11 show the Existing morning peak hour and evening peak hour intersection turning movement volumes.

EXISTING LEVEL OF SERVICE

The delay and Levels of Service for Existing traffic conditions have been calculated and are shown in Table 1. Existing intersection Level of Service worksheets are provided in Appendix E.

As shown in Table 1, the study intersections currently operate within acceptable Levels of Service (D or better) during the peak hours for Existing traffic conditions.

[2] Source: Approximate average evening peak hour K factor based on typical roadway traffic conditions.

Table 1
Existing Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour V/C[2] or [Delay][3]	AM Peak Hour LOS[4]	PM Peak Hour V/C[2] or [Delay][3]	PM Peak Hour LOS[4]
1.	Mountain View Ave at Florence Ave	TS	0.547	A	0.641	B
2.	Mission Pl at Florence Ave	TS	0.386	A	0.447	A
3.	State St at Florence Ave	TS	0.602	B	0.754	C

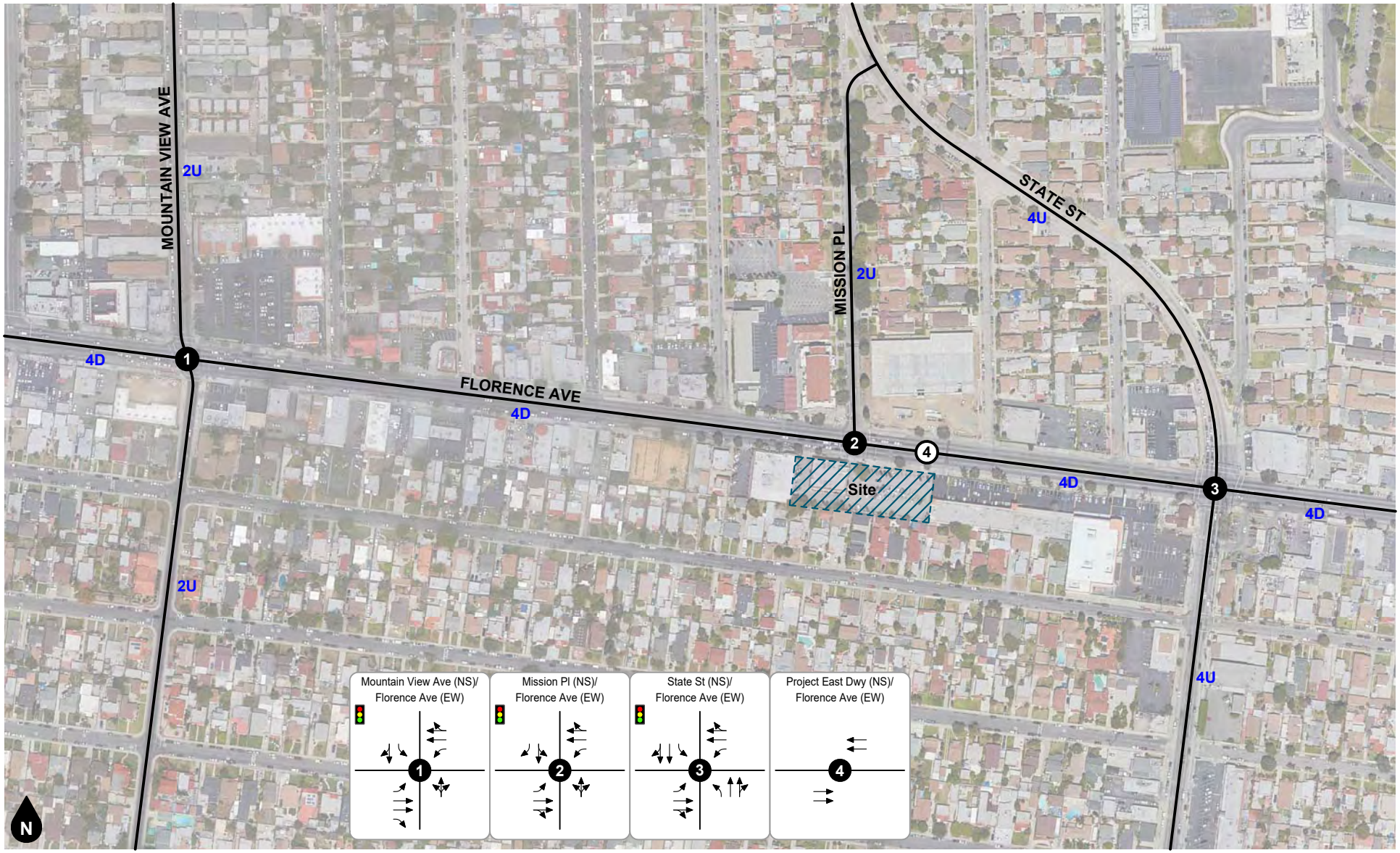
Notes:

(1) AWS = All-Way Stop; CSS = Cross Street Stop

(2) V/C = Volume/Capacity

(3) Delay is shown in seconds/vehicle. Level of Service is based on average delay of the worst approach.

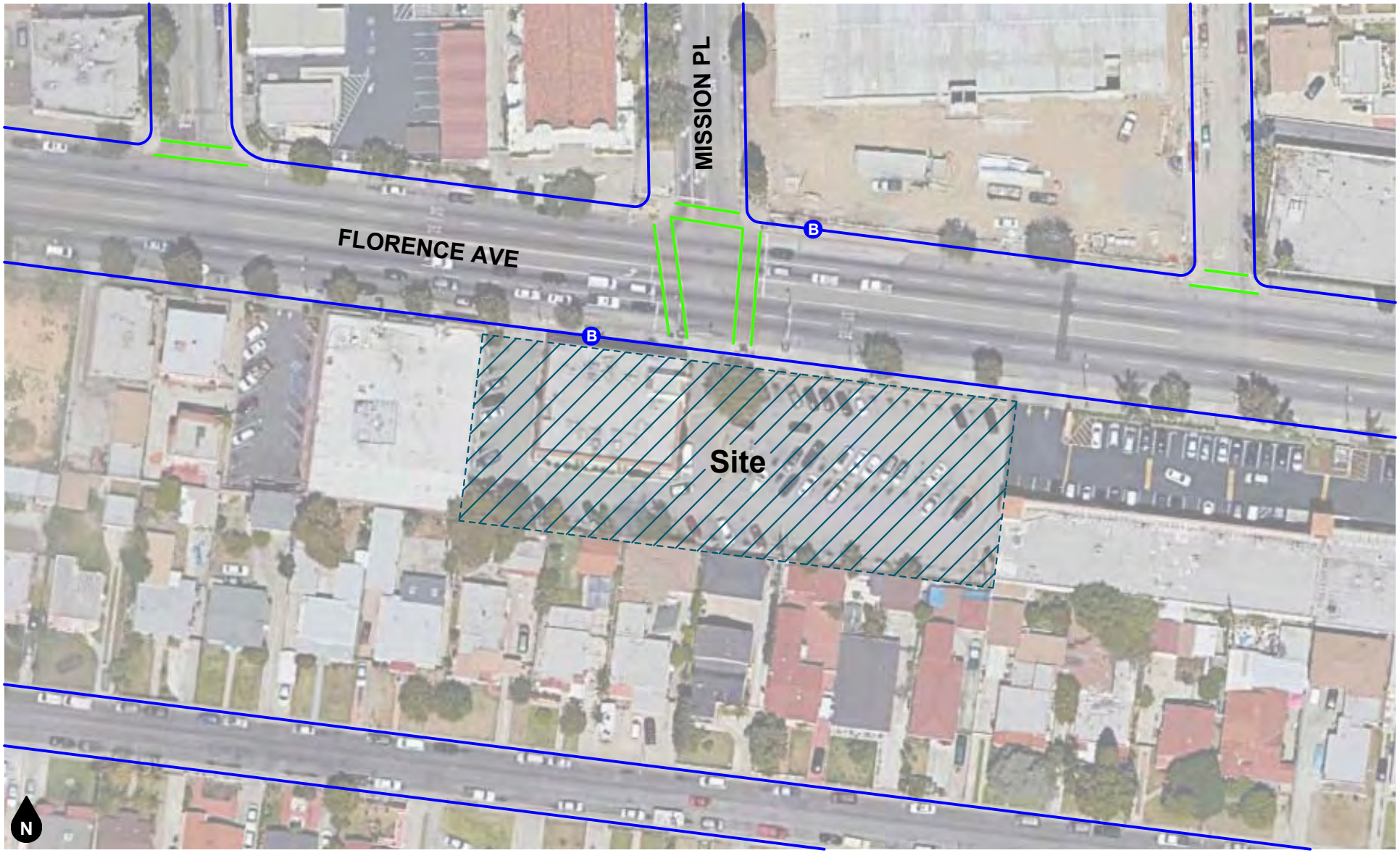
(4) LOS = Level of Service



Legend

- Traffic Signal
- STOP Stop Sign
- #D #-Lane Divided Roadway
- #U #-Lane Undivided Roadway
- Existing Lane

Figure 4
Existing Lane Geometry and Intersection Traffic Controls



Legend
- Sidewalk
- Cross Walk
- B Bus Stop

Figure 5
Existing Pedestrian Facilities

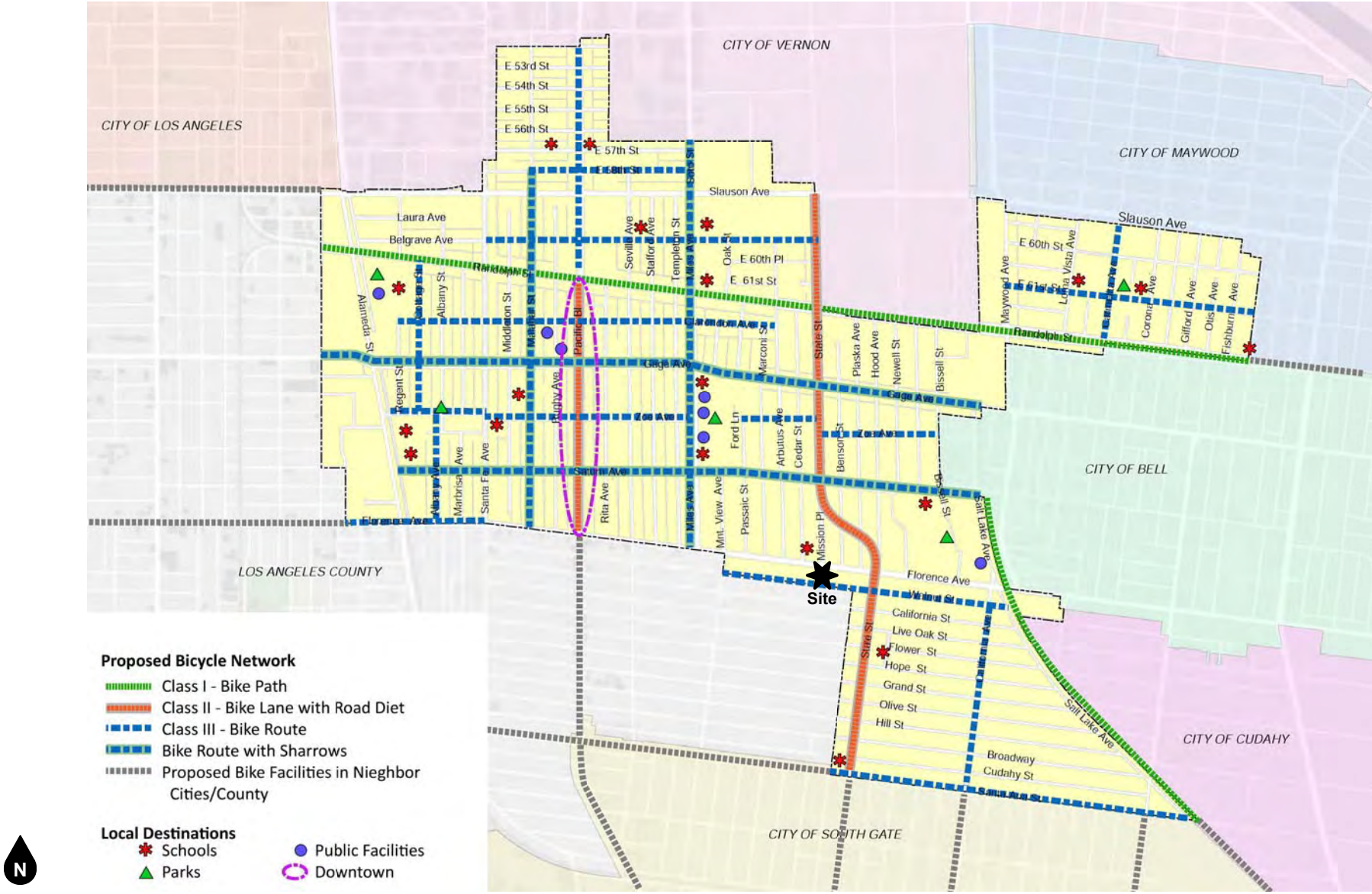


Figure 6
City of Huntington Park Bikeway Master Plan

Source: City of Huntington Park

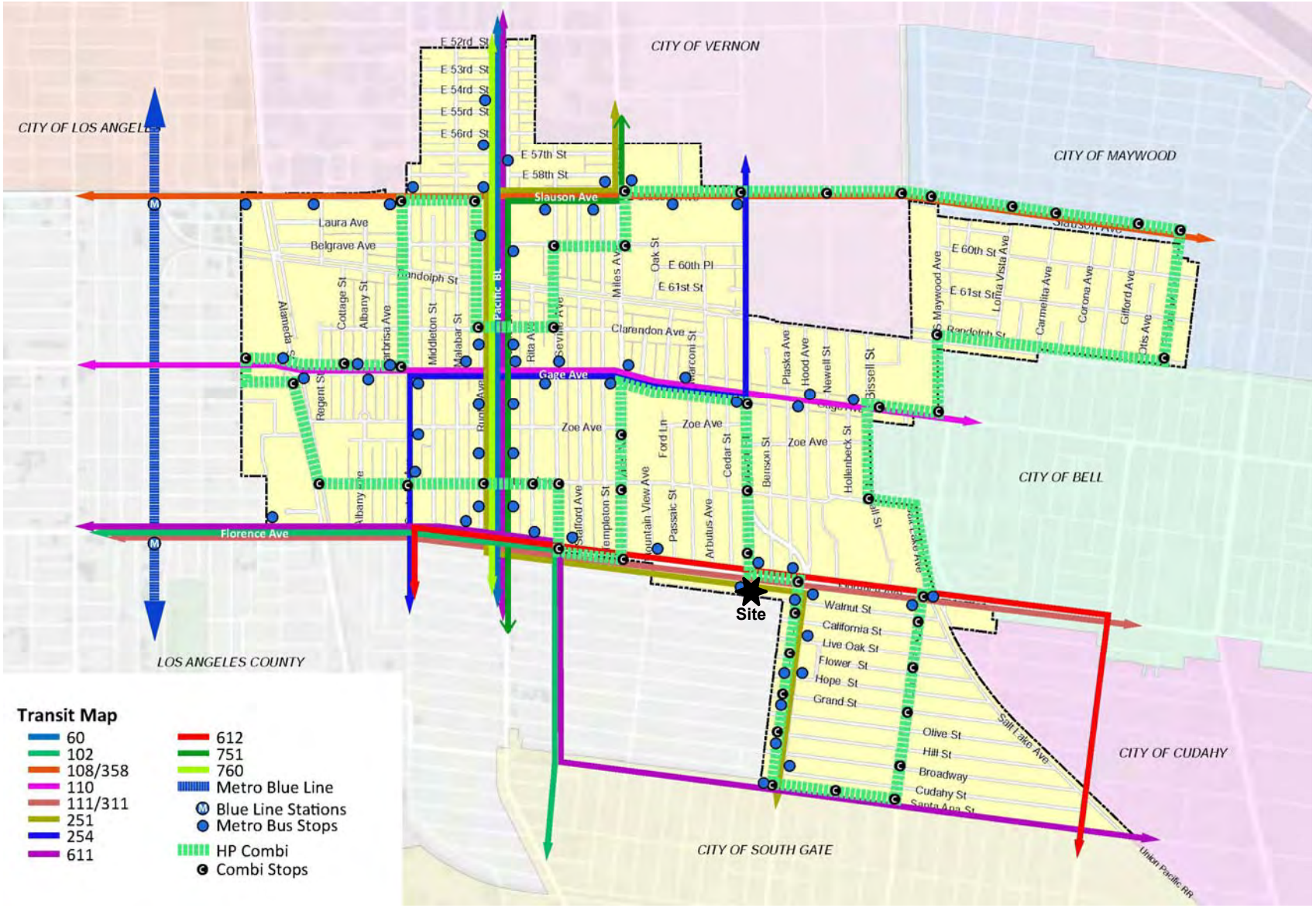


Figure 7
City of Huntington Park Transit Routes

Source: City of Huntington Park

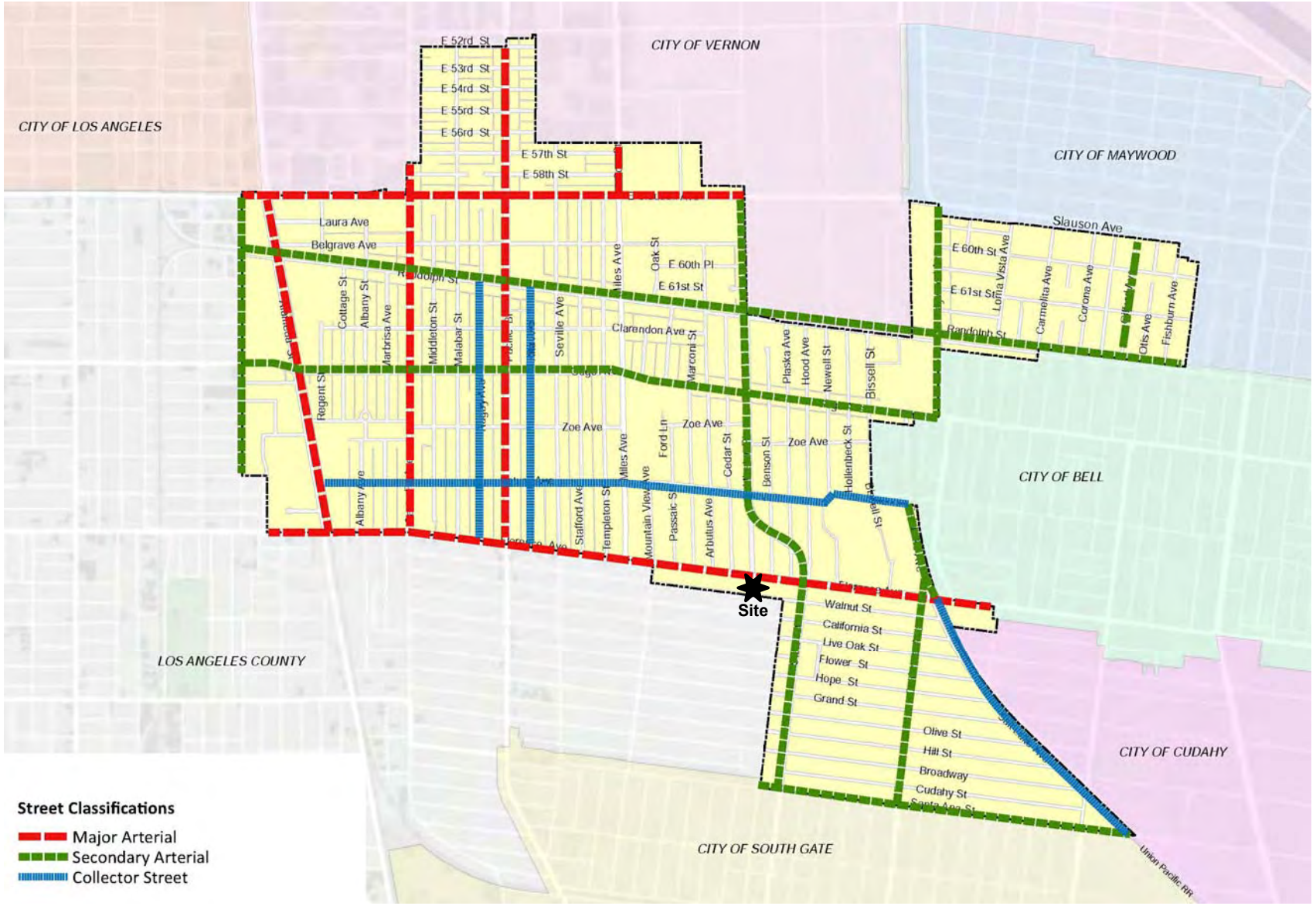
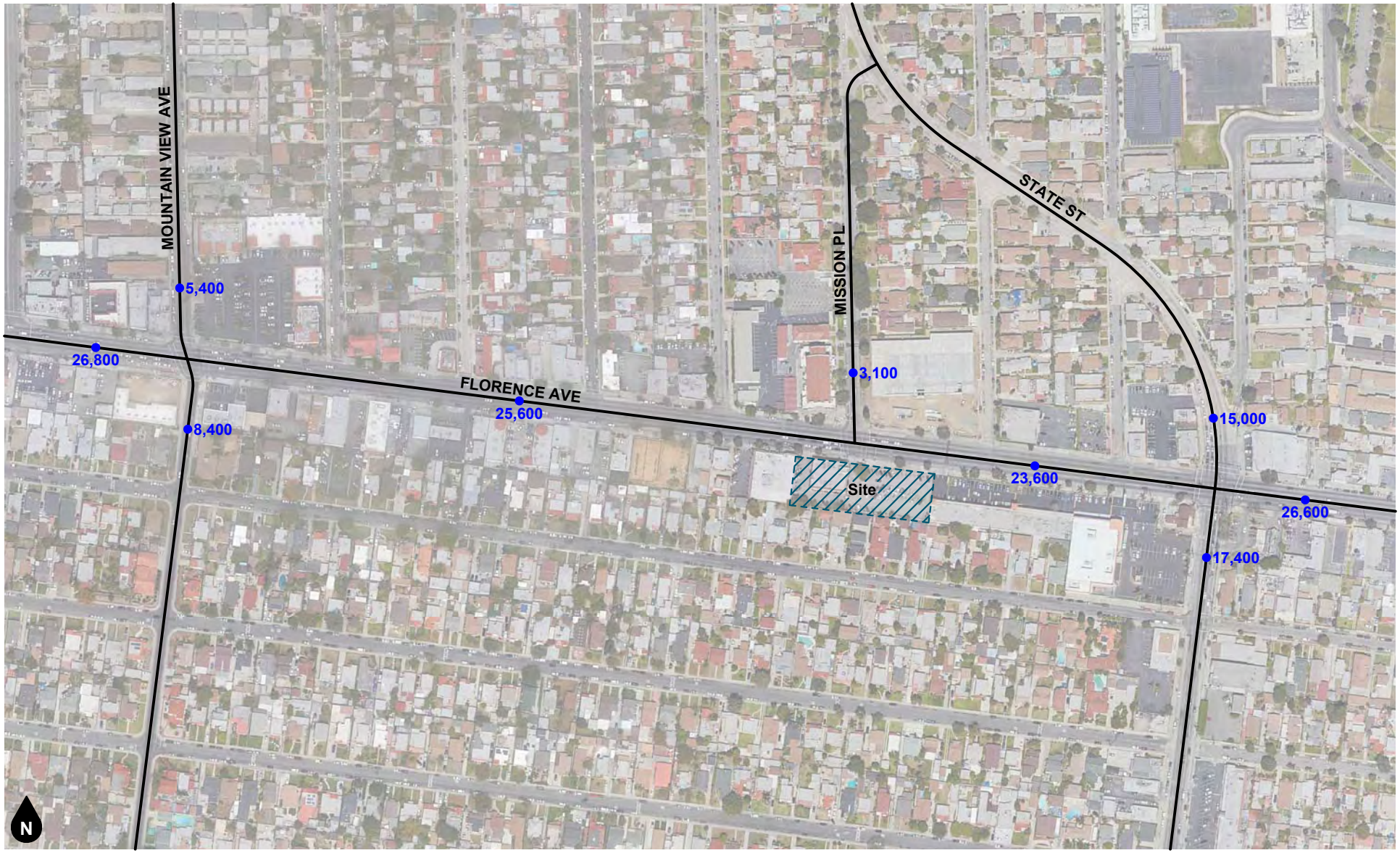


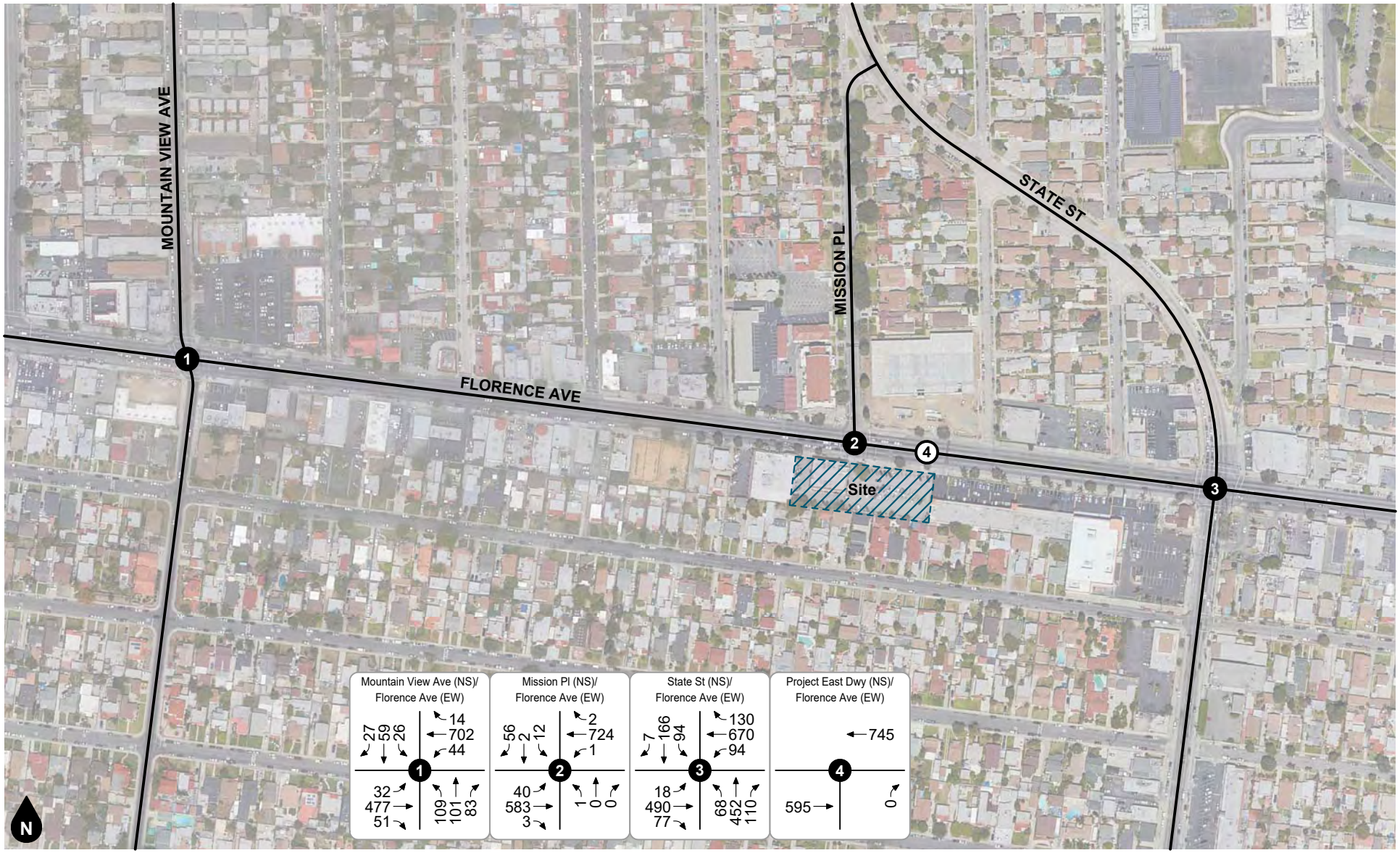
Figure 8
City of Huntington Park General Plan Circulation Element

Source: City of Huntington Park



Legend
●## Vehicles Per Day

Figure 9
Existing Average Daily Traffic Volumes

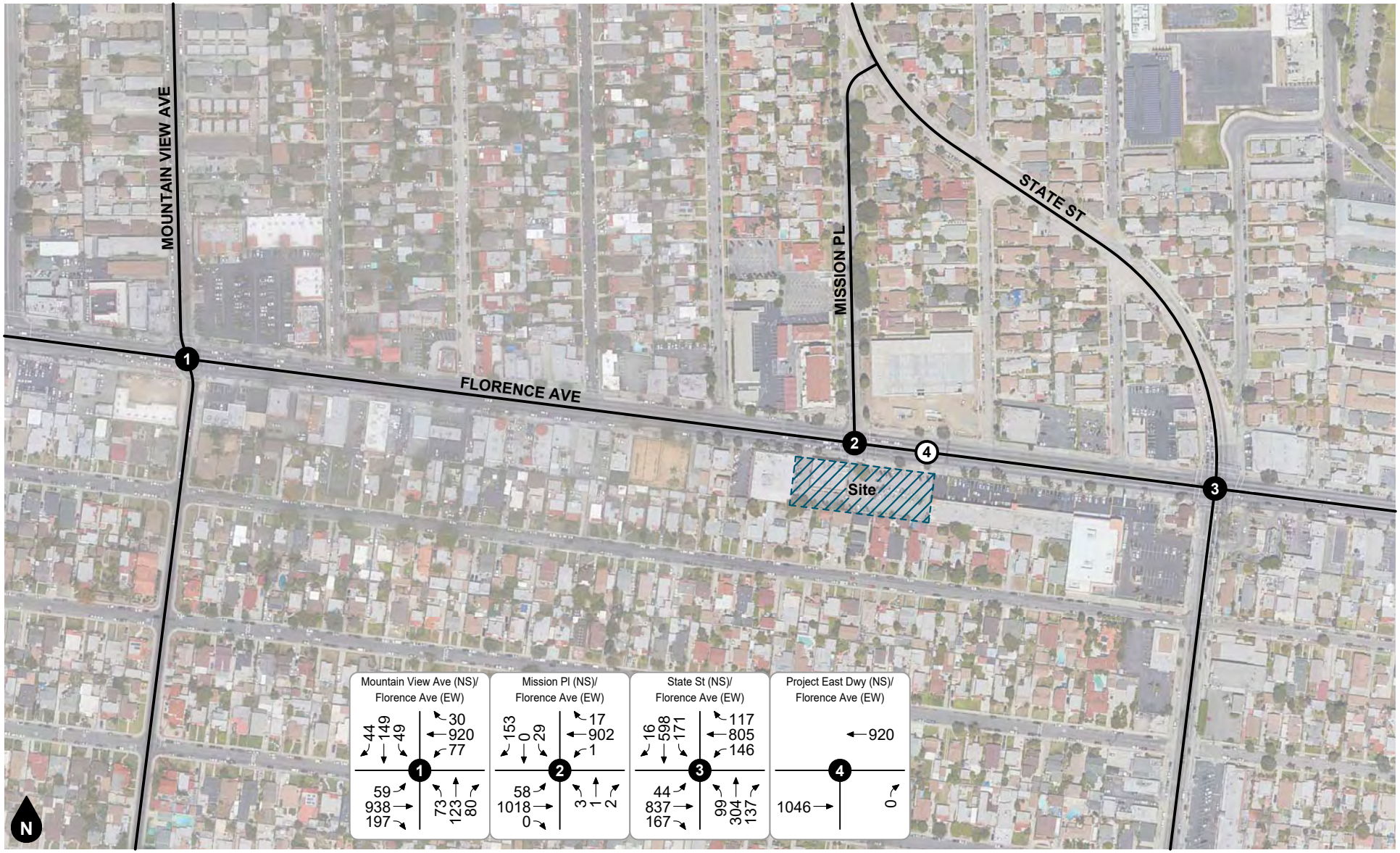


Legend

Study Intersection

(#) Project Driveway

Figure 10
Existing AM Peak Hour Intersection Turning Movement Volumes



Legend

(#) Study Intersection

(#) Project Driveway

Figure 11
Existing PM Peak Hour Intersection Turning Movement Volumes

4. PROJECT TRIP FORECASTS

This section describes how project trip generation, trip distribution, and trip assignment forecasts were developed. The forecast project volumes are illustrated on figures contained in this section.

PROJECT DESCRIPTION

The project site is located at 3100 Florence Avenue in the City of Huntington Park. The project site is located south side of Florence Avenue at the southern end of Mission Place between Mountain View Avenue and State Street. The project site is currently occupied with an 11,000 square foot medical office building, and it currently has a signalized full access driveway via the south leg of the intersection of Mission Place at Florence Avenue. The proposed project involves construction of a 4,712 square foot car wash with a car wash tunnel.

The proposed drive-through lane configuration provides queueing storage for approximately 12 vehicles from the car wash tunnel entrance to the pay stations and barrier arm gates plus storage for another nine vehicles from the pay stations to the entrance of the car wash drive-through lane for a total storage of approximately 12 vehicles. There will be a drying area with 29 parking stalls that are equipped with vacuum posts for vehicle interior cleaning and drying the vehicle exterior after the vehicles have traveled through the wash tunnel, two accessible parking stalls and two employee parking stalls for a total of 33 parking spaces. There will also be one motorcycle parking stall. The parking lot aisle for the drying area is available to serve as an overflow to accommodate seven additional queueing vehicles to enter the car wash drive-through lane.

The proposed project will retain the existing signalized driveway at the south leg of Mission Place, and the project will provide a new stop-controlled right-turn exit-only driveway on Florence Avenue east of Mission Place. The proposed project is anticipated to be constructed and fully operational by year 2023.

PROJECT TRIP GENERATION

Table 2 shows the project trip generation based upon standard rates obtained from the Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017 and custom trip generation rates based on traffic survey at other similar car wash facilities. The custom trip generation rates for based on available historic survey counts conducted at two similar automatic car wash facilities at Matt's Express Carwash in the City of Rialto on January 19, 2014 and at Matt's Express Carwash in the City of Redlands on December 14, 2016. Appendix F shows the car wash facility count survey count sheets. The survey counts were conducted on a typical weekday over the entire hours of operations showing the "time of the day". The morning (AM) and afternoon (PM) peak hour trip rates are derived from the highest one-hour within of the typical peak periods of adjacent street traffic between 7 and 9 AM in the morning and between 4 and 6 PM in the afternoon. Based on input from the operators of similar car wash facilities, the monthly activity levels are consistent between the summer season and other non-summer seasons. As shown in Table 2 in comparison to other available trip generation rates published by Institute of Transportation Engineers (ITE) and San Diego Association of Governments (SANDAG), the customized trip rates based on the similar car wash facilities are more conservative than the published trip rates by ITE and SANDAG.

The project trip generation is determined by multiplying the proposed land use quantities by the trip generation rates and inbound/outbound percentages. As shown in Table 2, the proposed project is forecast to generate a total of approximately net 561 daily vehicle trips, including net 33 trips during the AM peak hour and net 96 trips during the PM peak hour.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

Figure 12 shows the forecast directional trip distribution patterns for the project generated trips. The project trip distribution patterns are based on review of existing volume data, surrounding land uses, designated truck routes, and the local and regional roadway facilities in the project vicinity.

Based on the identified project trip generation and distributions, project average daily traffic volumes have been calculated and shown on Figure 14. Project morning and evening peak hour intersection turning movement volumes expected from the project are depicted on Figure 15 and Figure 16, respectively.

Table 2
Project Trip Generation

Trip Generation Rates										
Project				AM Peak			PM Peak			Weekday Daily
No.	Land Use	Code[1]	Units[2]	In %	Out %	Total	In %	Out %	Total	
1	Medical-Dental Office Building	ITE 720	TSF	78%	22%	2.78	28%	72%	3.46	34.80
2	Automated Car Wash	Survey[3]	Site	55%	45%	64.00	50%	50%	134.00	944.00
3	Automated Car Wash	ITE 948	CWT				50%	50%	77.50	
4	Automatic Car Wash	SANDAG	Site	50%	50%	36.00	50%	50%	81.00	900.00

Trips Generated									
Project			AM Peak			PM Peak			Weekday Daily
No.	Land Use	Quantity[2]	In	Out	Total	In	Out	Total	
	Existing Land Use[4]								
1	Medical-Dental Office Building	11.000 TSF	24	7	31	11	27	38	383
	Proposed Project								
2	Automated Car Wash	1 Site	35	29	64	67	67	134	944
Project Net Trips			+11	+22	+33	+56	+40	+96	+561

Notes:

(1) ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; XXX = Land Use Code

San Diego Association of Governments (SANDAG), Brief Guide of Vehicular Traffic Generation Rates for the San Diego Area, April 2002.

(2) TSF = Thousand Square Feet; CWT = Car Wash Tunnel

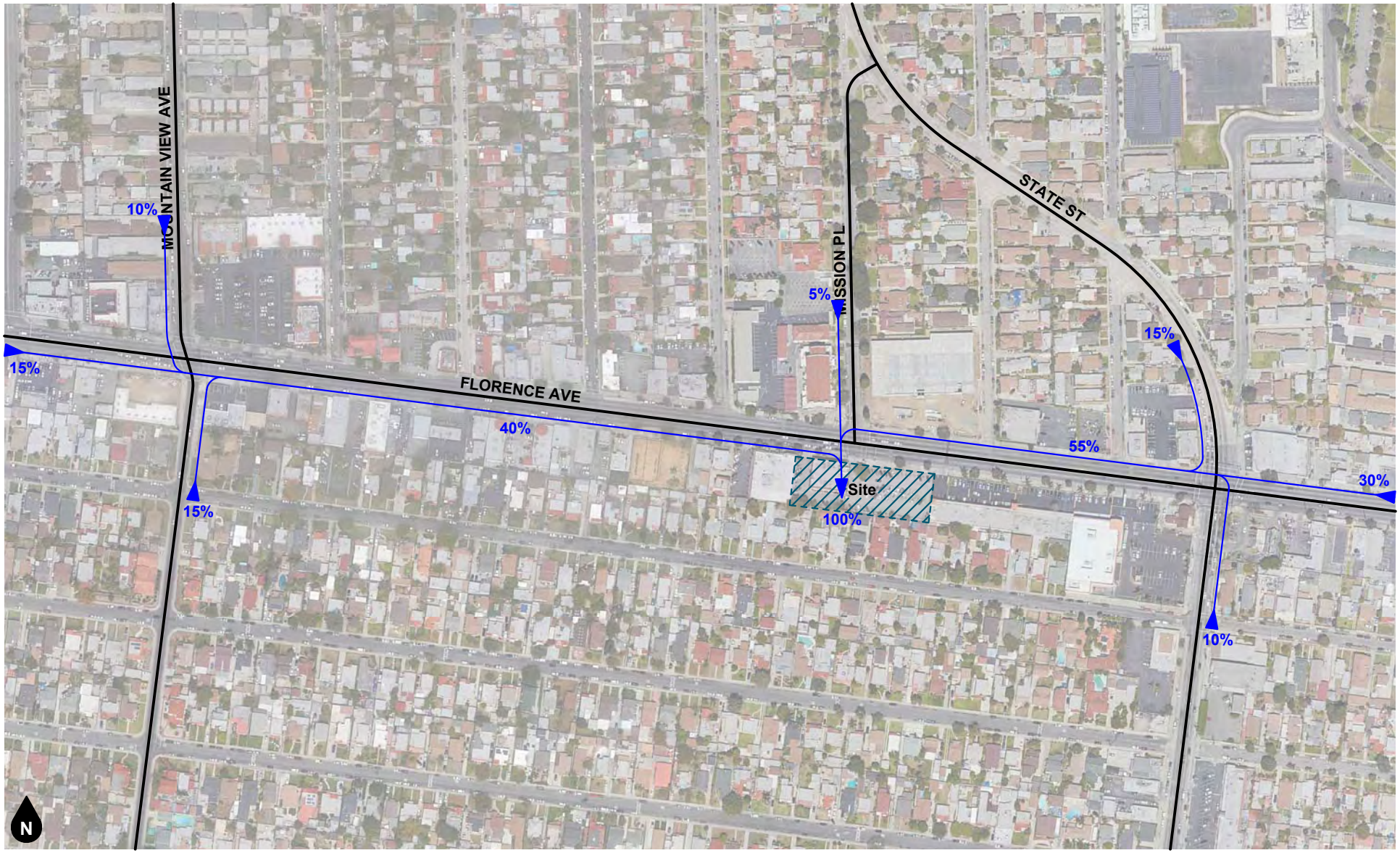
(3) Survey counts of the existing Matt's Express Carwash facility located in the City of Rialto and Matt's Express Carwash facility located in the City of Redlands (see Appendix A)

(4) Existing trip credit for existing building estimated based on approximate building size.

Legend

10% Percent From Project

Figure 12
Project Outbound Trip Distribution



Legend

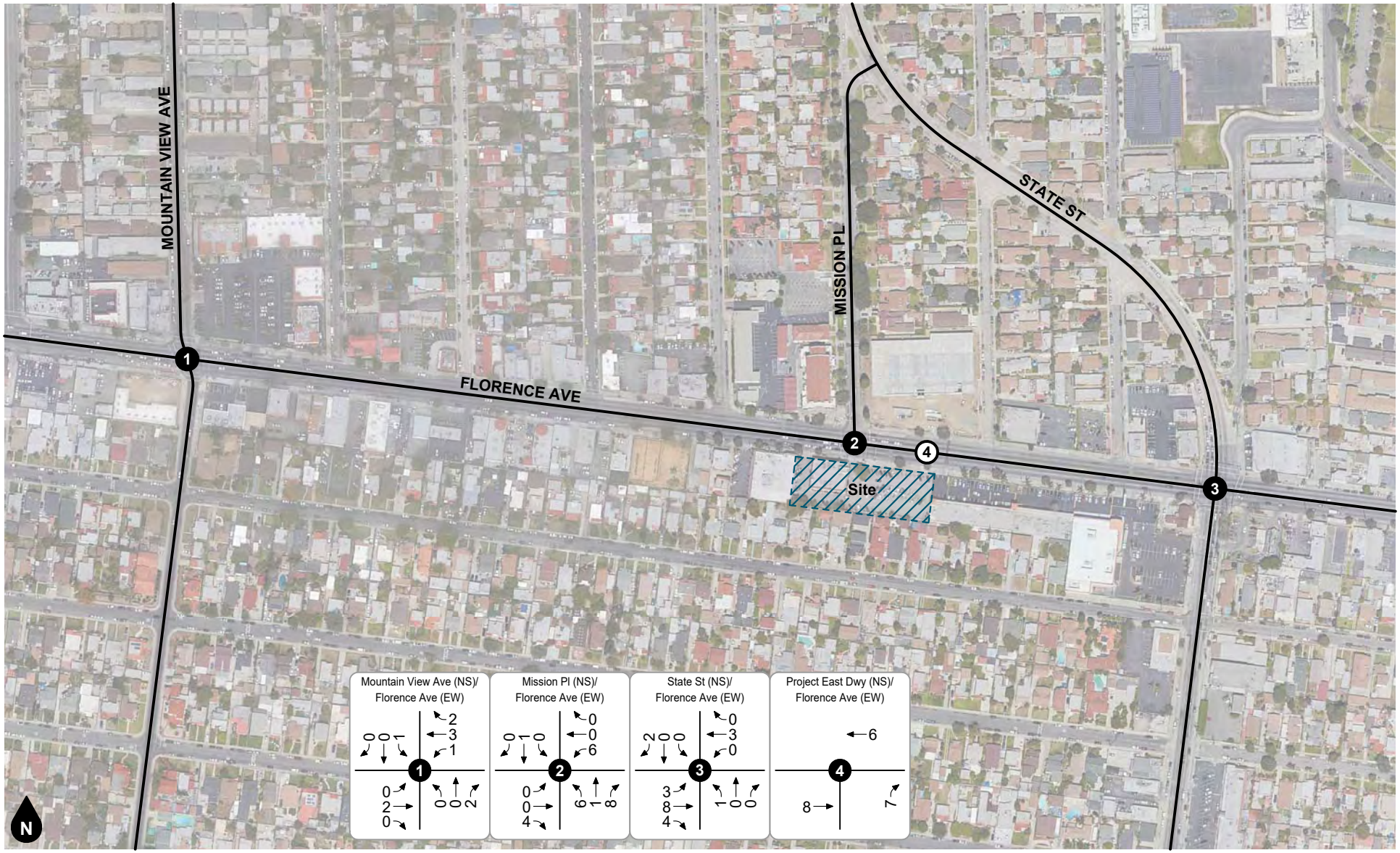
10% Percent To Project

Figure 13
Project Inbound Trip Distribution

Legend

●## Vehicles Per Day

Figure 14
Project Average Daily Traffic Volumes

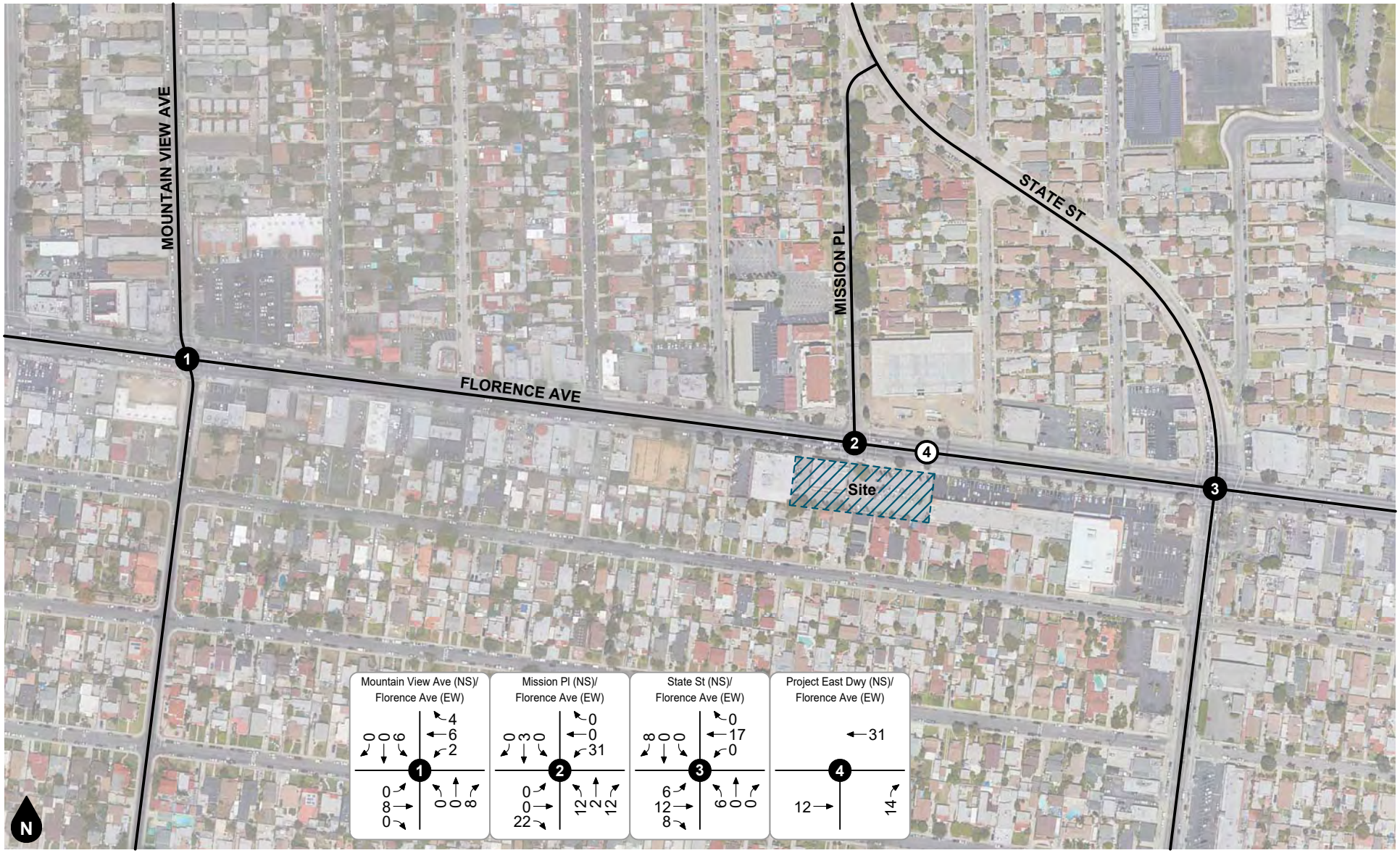


Legend

(#) Study Intersection

(#) Project Driveway

Figure 15
Project AM Peak Hour Intersection Turning Movement Volumes



Legend

(#) Study Intersection

(#) Project Driveway

Figure 16

Project PM Peak Hour Intersection Turning Movement Volumes

5. FUTURE VOLUME FORECASTS

This section describes how future volume forecasts for each analysis scenario were developed. Forecast study area volumes are illustrated on figures contained in this section.

CUMULATIVE TRIPS

Ambient Growth Rate

To account for ambient growth on roadways, existing and current 2021 traffic volumes were increased by an annual growth rate of 1.4 percent (1.4%) per year over two years for Opening Year (2023) conditions. As shown in Table 3, an annual ambient growth rate of 1.4% is estimated based on the Los Angeles County Congestion Management Program (CMP) General Traffic Volume Growth Factors for 2015 and 2020 for the Regional Statistical Area of Downey (RSA21). The Opening Year 2023 will included a 1.4% annual growth for 2 years (total growth factor = 1.028) over the 2021 base volumes. The ambient growth rate was conservatively applied to all movements at the study intersections.

ANALYSIS SCENARIO VOLUME FORECASTS

Existing Plus Project

Existing Plus Project volume forecasts were derived by adding the project generated trips to Existing volumes. Existing Plus Project average daily traffic volumes are shown on Figure 17. Existing Plus Project morning and evening peak hour intersection turning movement volumes are shown on Figure 18 and Figure 19.

Opening Year (2023) Without Project

To develop Opening Year (2023) Without Project volume forecasts, Existing volumes were combined with ambient growth. Opening Year (2023) Without Project average daily traffic volumes are shown on Figure 20. Opening Year (2023) Without Project morning and evening peak hour intersection turning movement volumes are shown Figure 21 and Figure 22.

Opening Year (2023) With Project

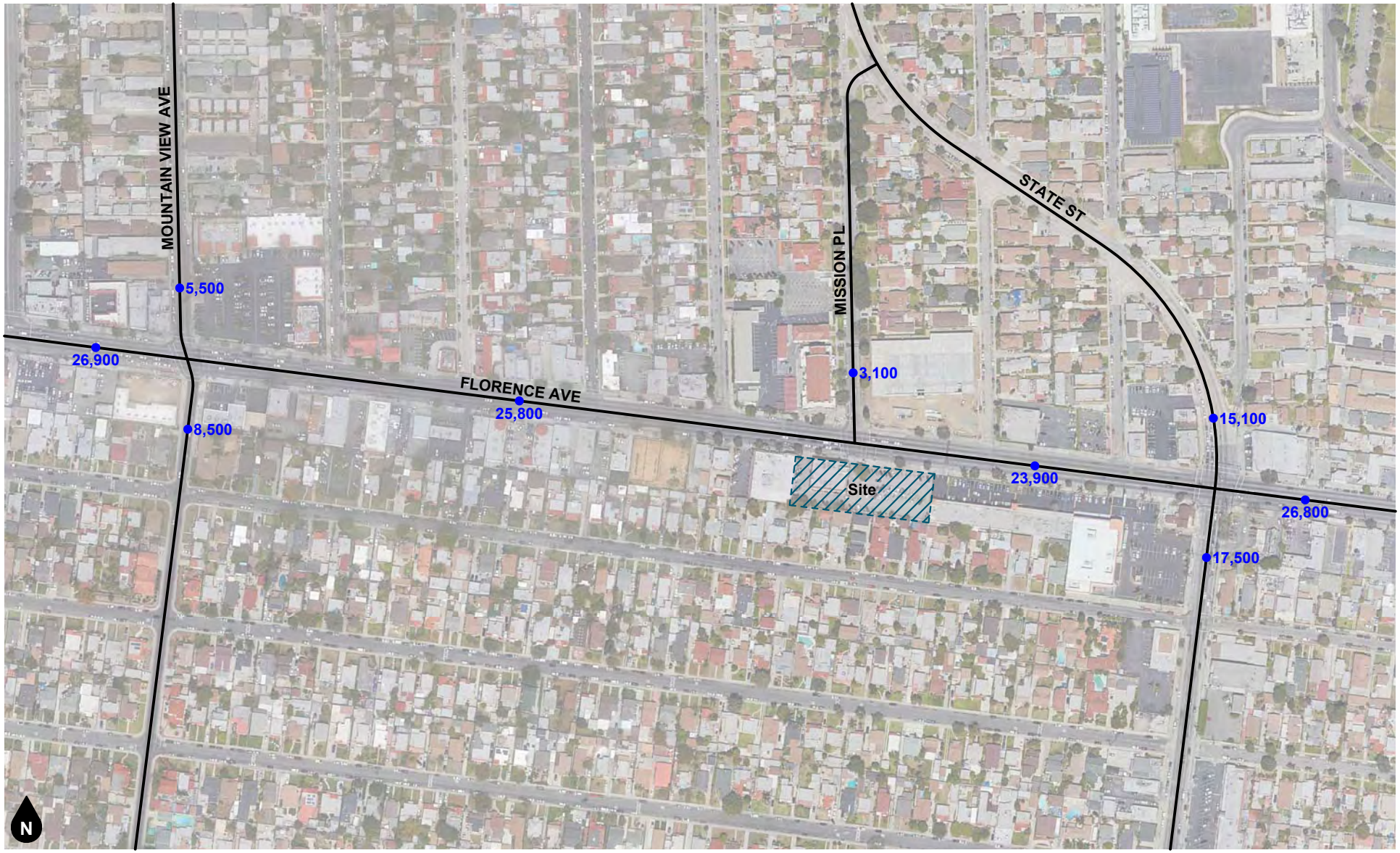
Opening Year (2023) With Project volume forecasts were developed by adding project generated trips to the Opening Year (2023) Without Project forecast. Opening Year (2023) With Project average daily traffic volumes are shown on Figure 23. Opening Year (2023) With Project morning and evening peak hour intersection turning movement volumes are shown on Figure 24 and Figure 25.

Table 3
Annual Growth Rate Calculation

Regional Statistical Area (RSA)	Year 1		Year 2		Overall Growth		Annual Growth	
	Year	Growth Factor[1]	Year	Growth Factor[1]	Years of Growth	Growth Factor	Growth Factor	Growth Rate
21 Vernon	2015	1.073	2020	1.146	5	1.073	1.014	1.4%

Notes:

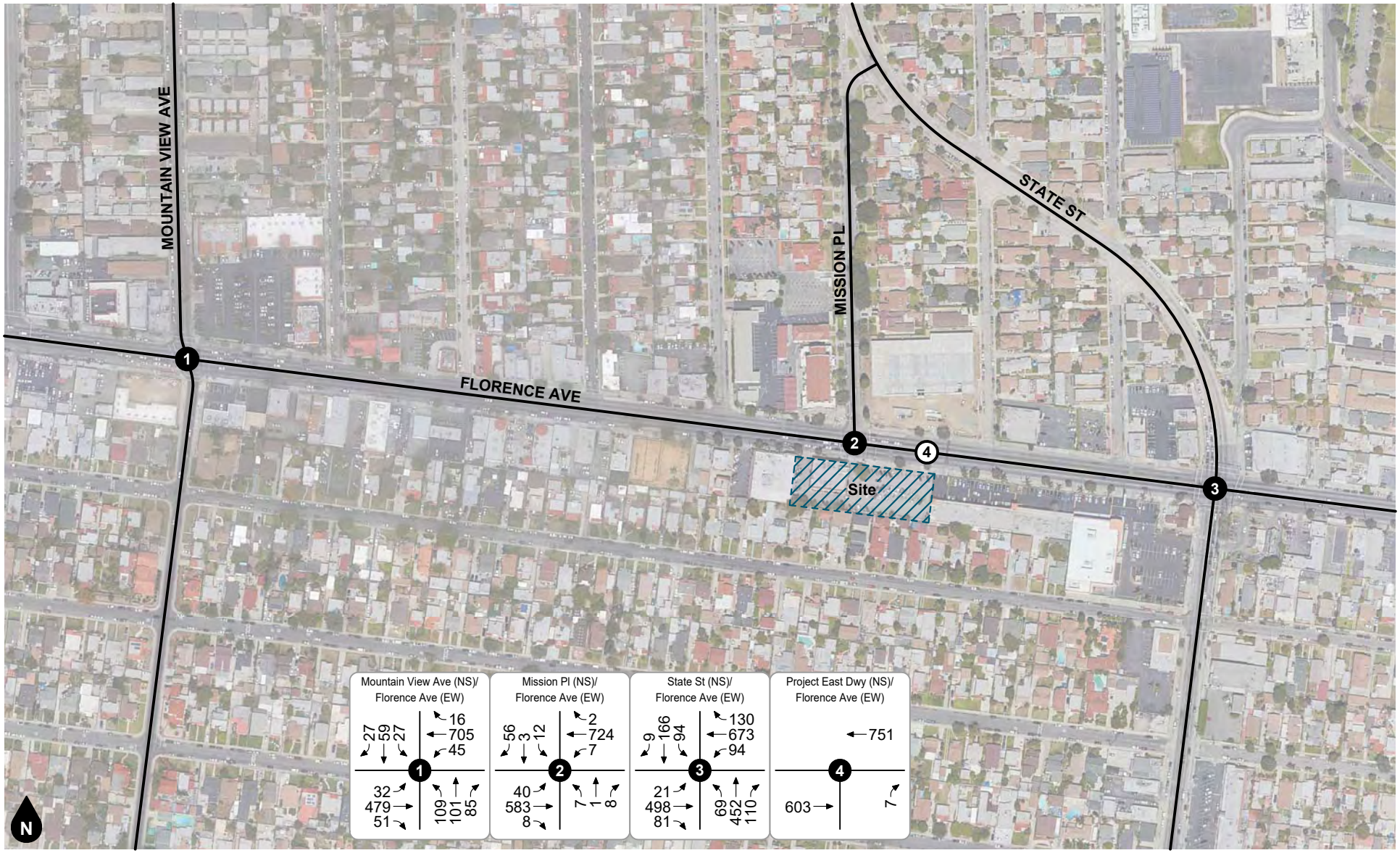
(1) Los Angeles County Congestion Management Program (CMP) General Traffic Volume Growth Factors (Exhibit D-1)



Legend

●## Vehicles Per Day

Figure 17
Existing Plus Project Average Daily Traffic Volumes

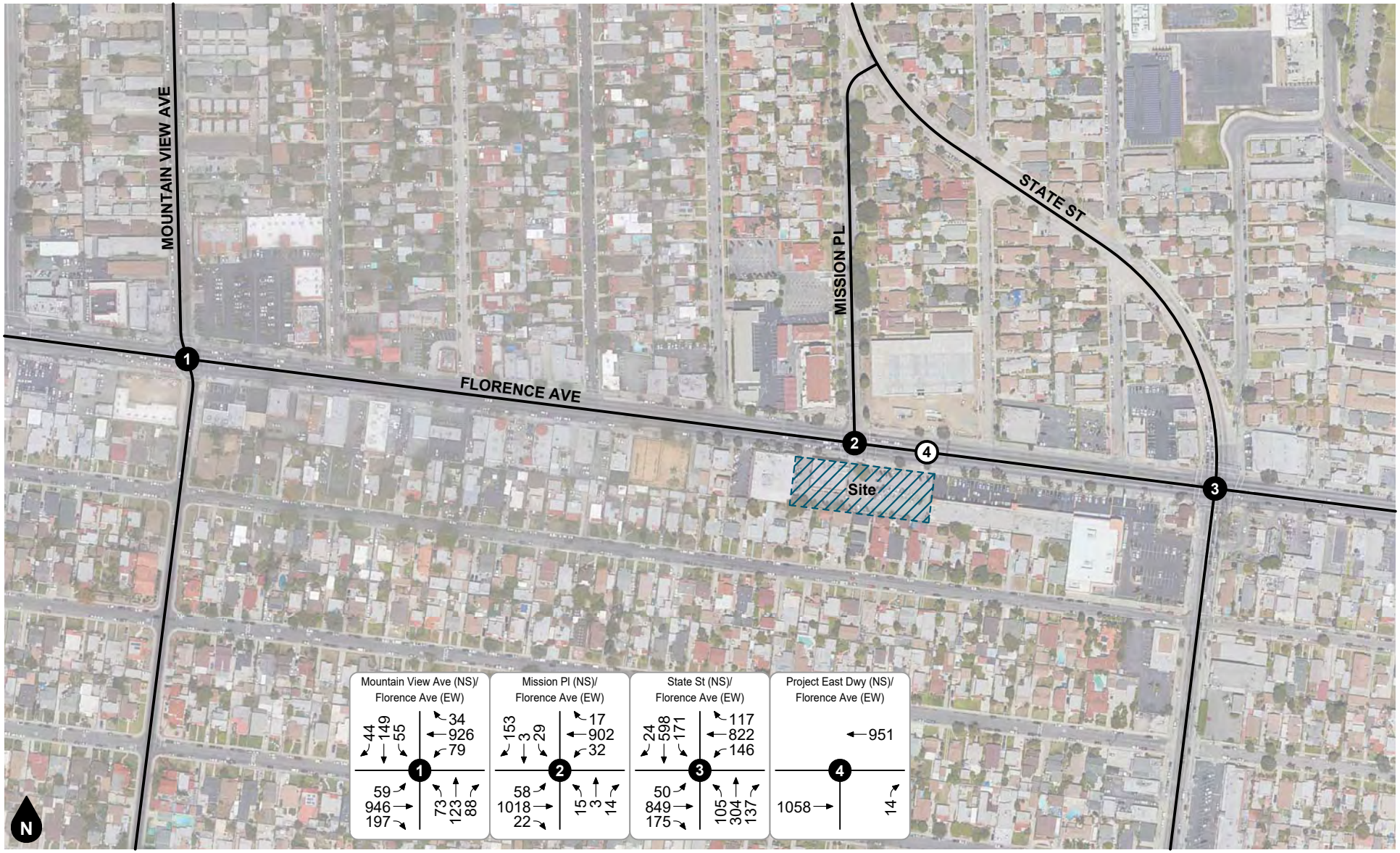


Legend

(#) Study Intersection

(#) Project Driveway

Figure 18
Existing Plus Project
AM Peak Hour Intersection Turning Movement Volumes

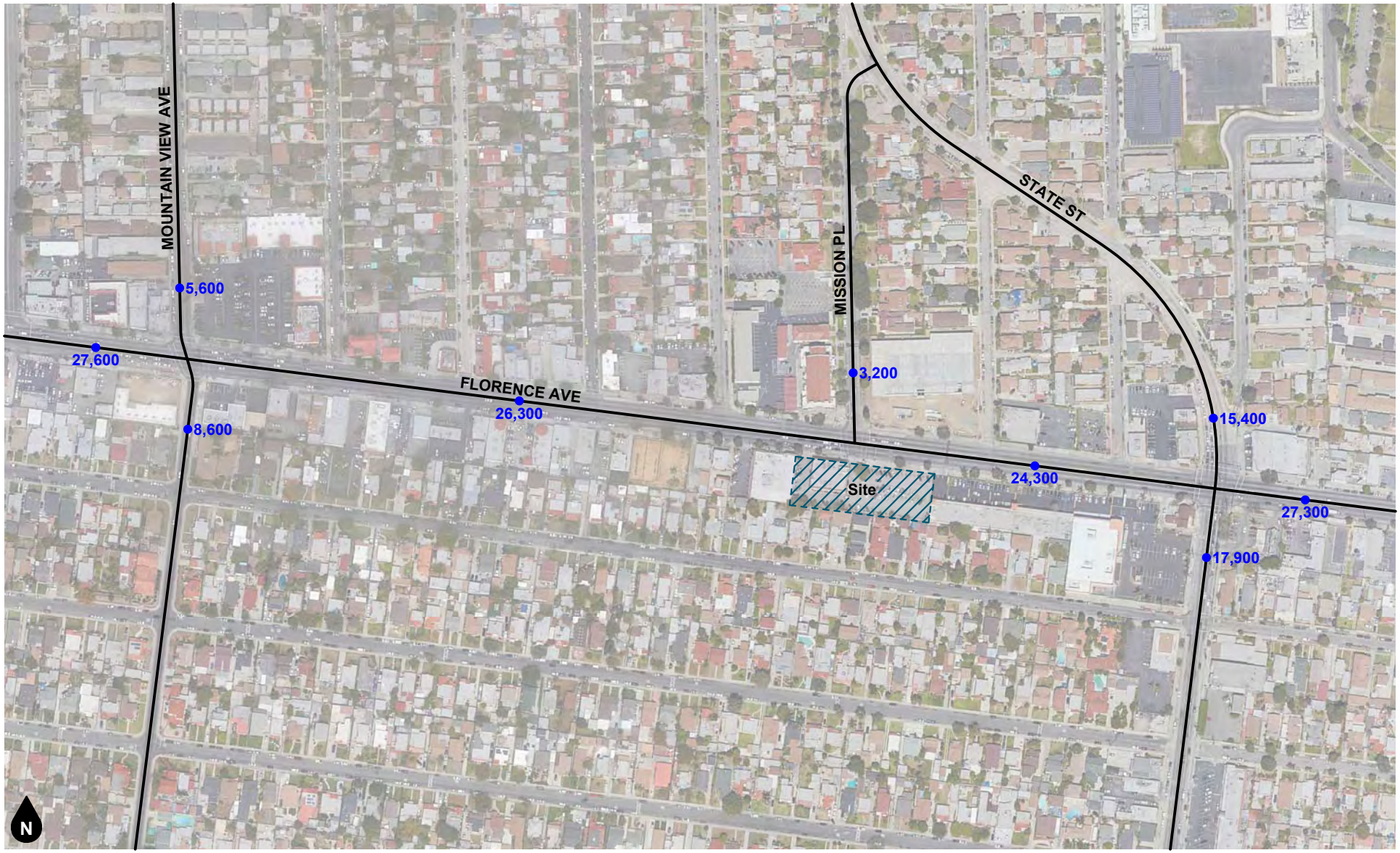


Legend

Study Intersection

(#) Project Driveway

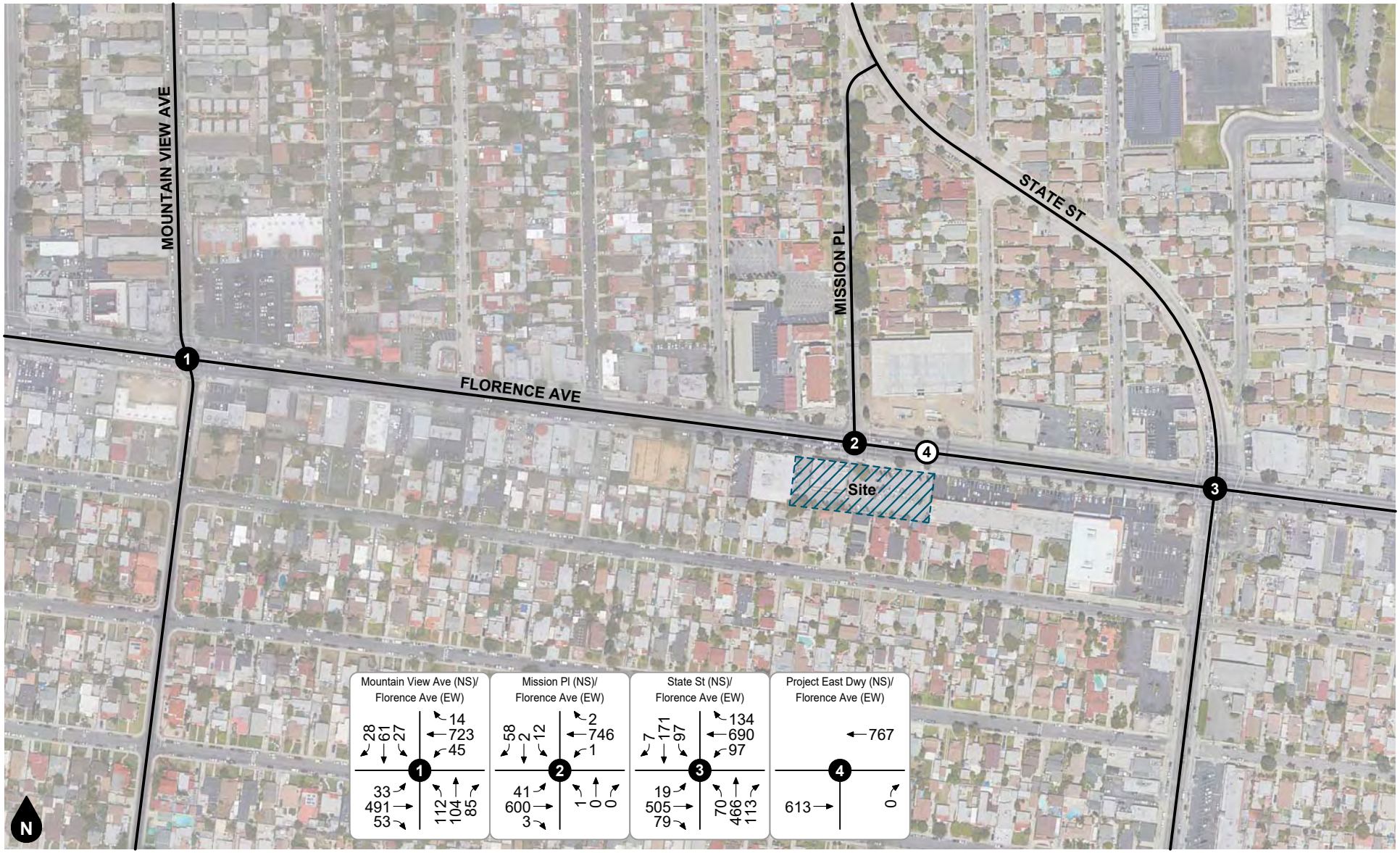
Figure 19
Existing Plus Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day

Figure 20
Opening Year (2023) Without Project Average Daily Traffic Volumes

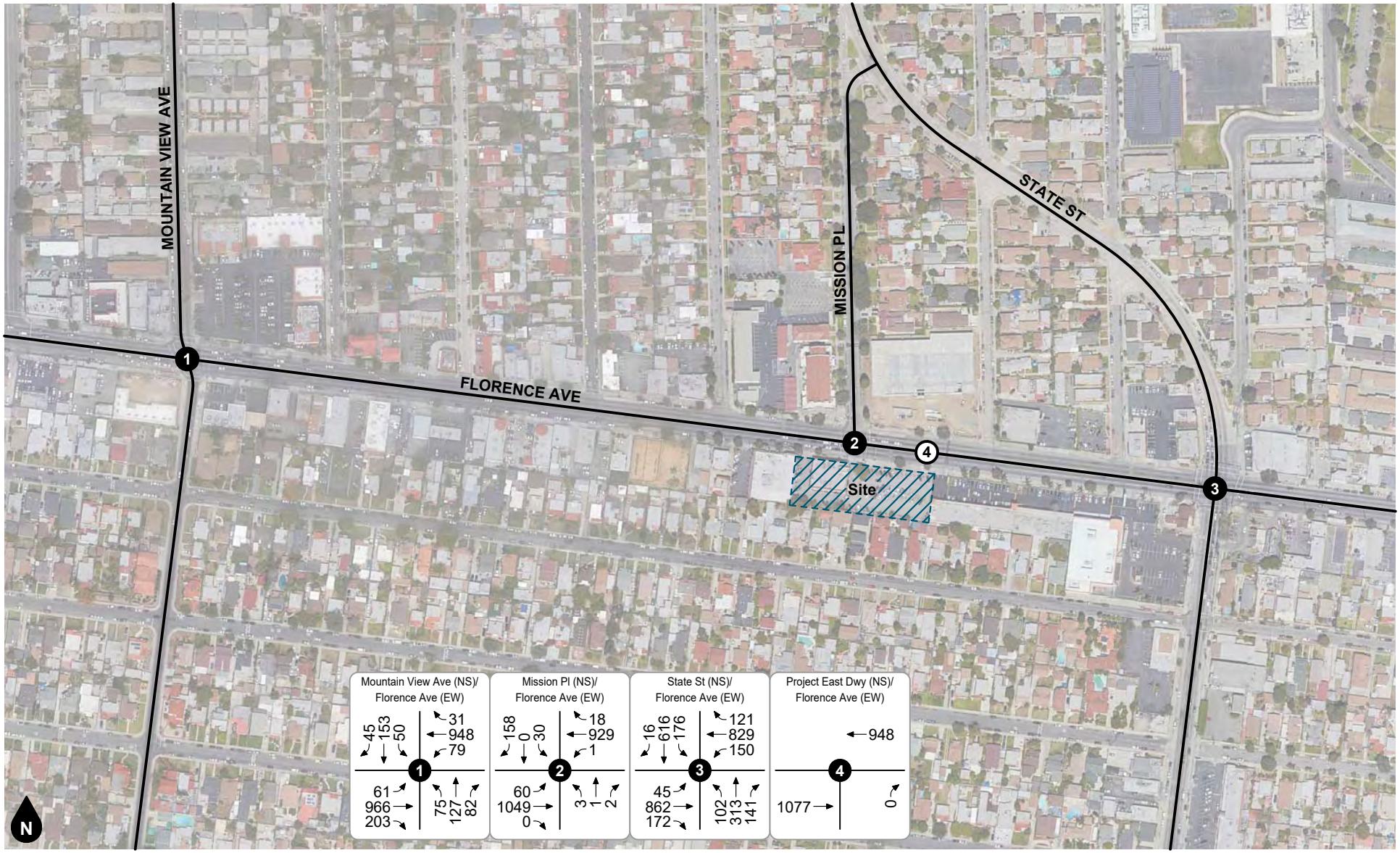


Legend

Study Intersection

(#) Project Driveway

Figure 21
Opening Year (2023) Without Project
AM Peak Hour Intersection Turning Movement Volumes

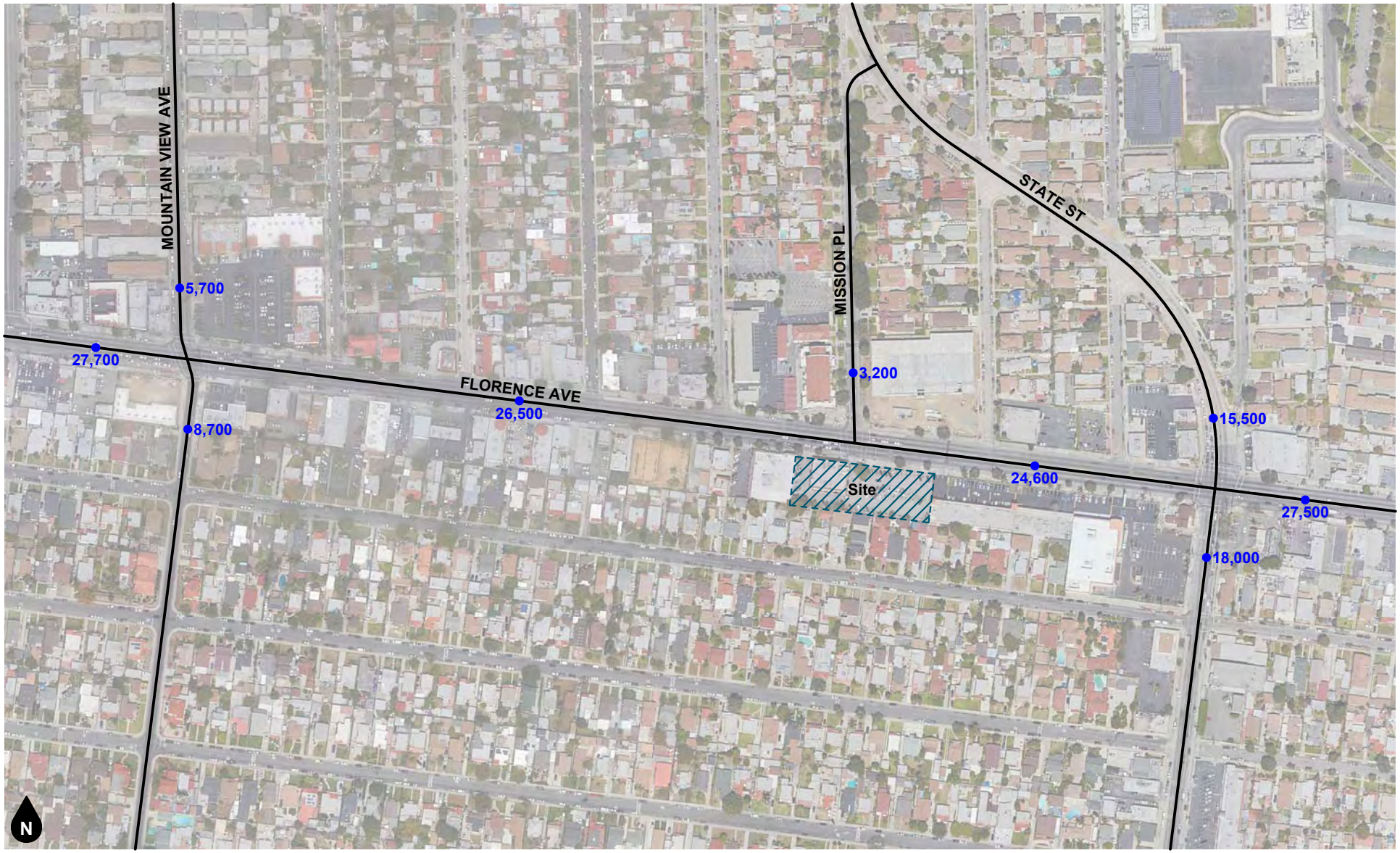


Legend

Study Intersection

(#) Project Driveway

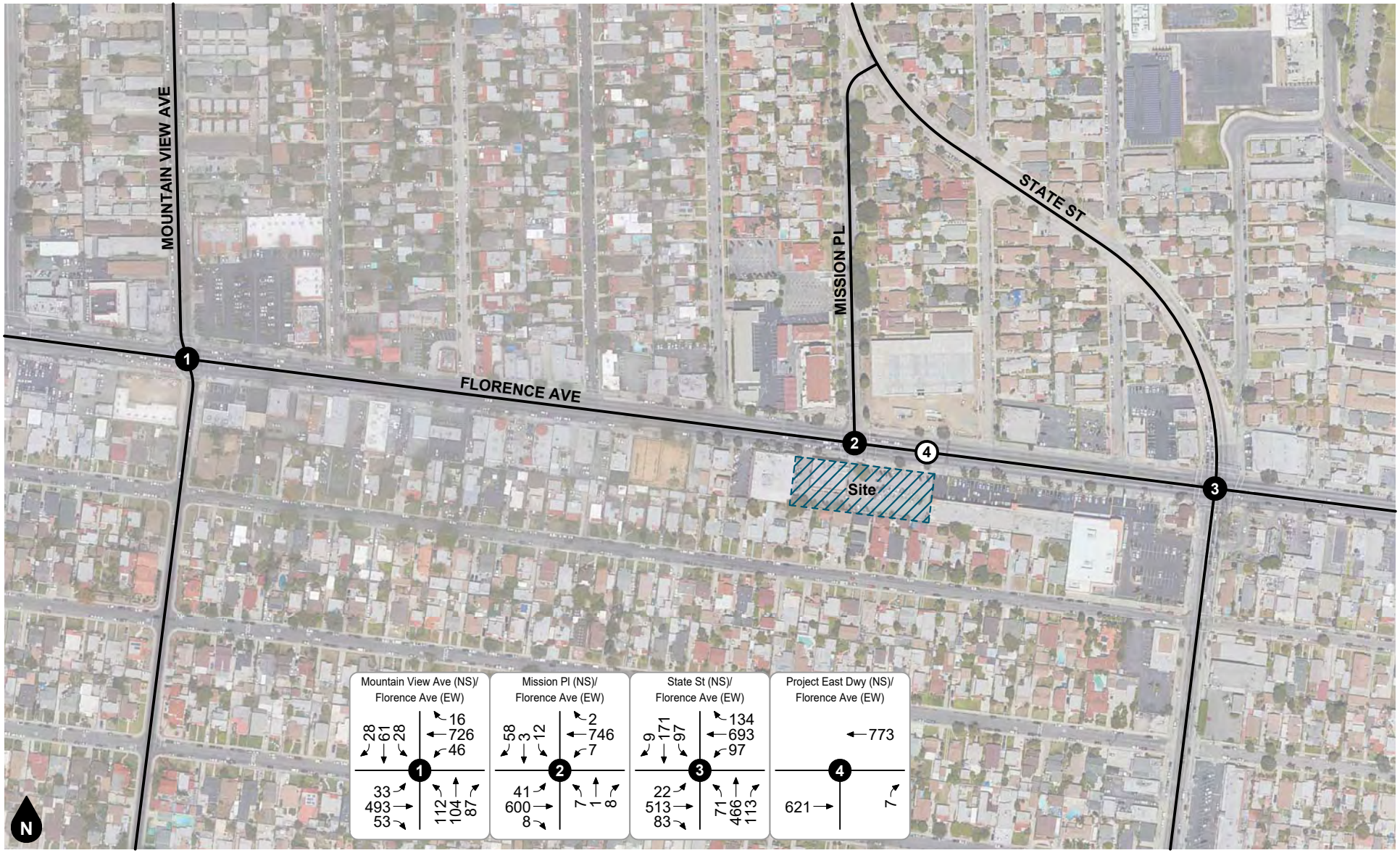
Figure 22
Opening Year (2023) Without Project
PM Peak Hour Intersection Turning Movement Volumes



Legend

●## Vehicles Per Day

Figure 23
Opening Year (2023) With Project Average Daily Traffic Volumes

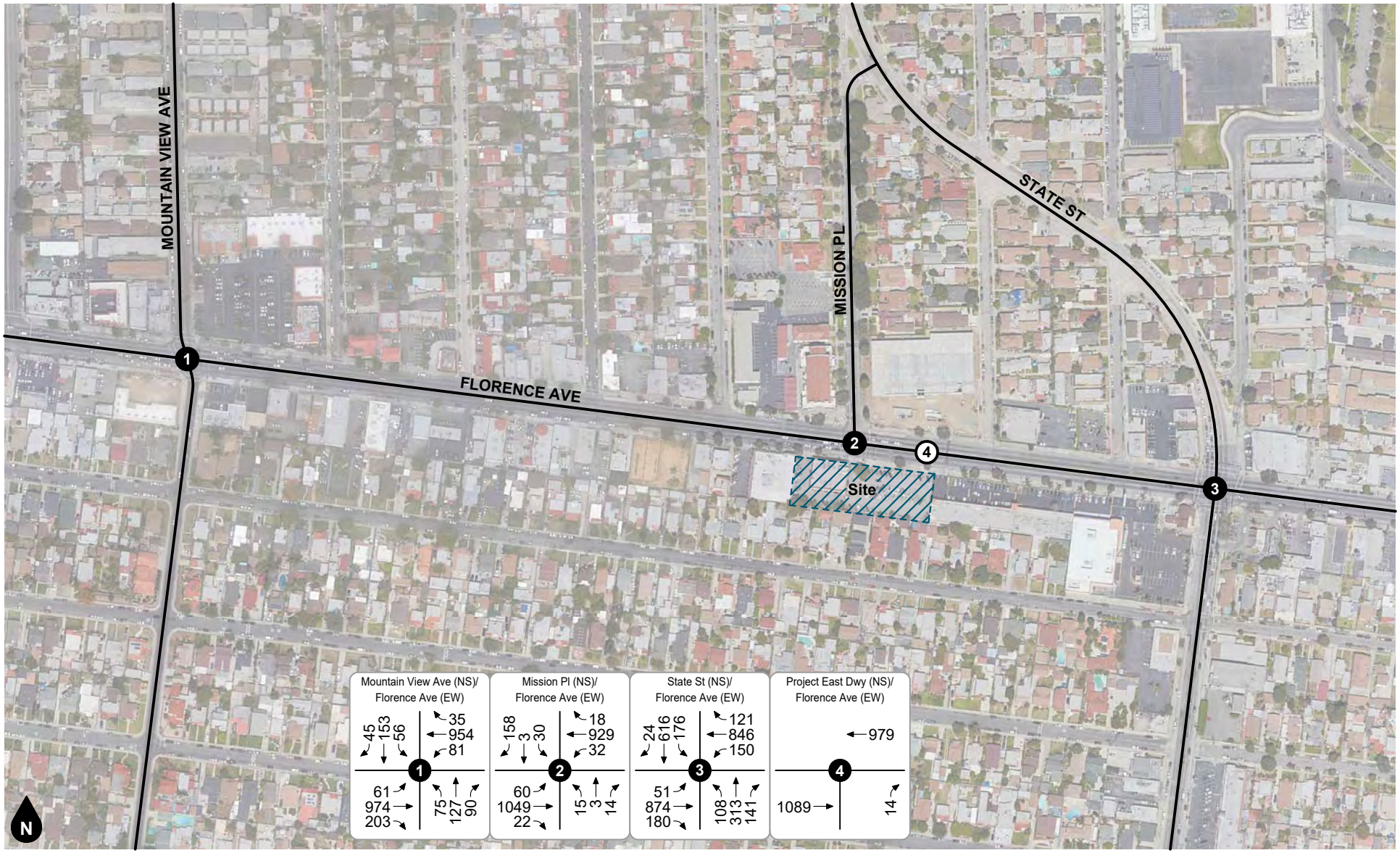


Legend

Study Intersection

(#) Project Driveway

Figure 24
Opening Year (2023) With Project
AM Peak Hour Intersection Turning Movement Volumes



Legend

Study Intersection

(#) Project Driveway

Figure 25
Opening Year (2023) With Project
PM Peak Hour Intersection Turning Movement Volumes

6. FUTURE OPERATIONAL ANALYSIS

Detailed intersection Level of Service calculation worksheets for each of the following analysis scenarios are provided in Appendix E.

EXISTING PLUS PROJECT

Intersection Levels of Service

The delay and Levels of Service for Existing Plus Project conditions are shown in Table 4. As shown in Table 4, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Existing Plus Project traffic conditions.

Operational Deficiency Evaluation

Table 4 evaluates the project change at the study intersections for Existing Plus Project conditions. As shown in Table 4, the proposed project is forecast to result in no operational deficiency at the study intersections for Existing Plus Project conditions. No additional off-site intersection mitigation is required.

OPENING YEAR (2023) WITHOUT PROJECT

Intersection Levels of Service

The delay and Levels of Service for Opening Year (2023) Without Project conditions are shown in Table 5. As shown in Table 5, the study intersections are forecast to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2023) Without Project conditions.

OPENING YEAR (2023) WITH PROJECT

Intersection Levels of Service

The delay and Levels of Service for Opening Year (2023) With Project conditions are shown in Table 6. As shown in Table 6, the study intersections are projected to operate within acceptable Levels of Service (D or better) during the peak hours for Opening Year (2023) With Project conditions.

Operational Deficiency Evaluation

Table 6 evaluates the project change at the study intersections for Opening Year (2023) With Project conditions. As shown in Table 6, the proposed project is forecast to result in no operational deficiency at study intersections for Opening Year (2023) With Project conditions. No additional off-site intersection mitigation is required.

Table 4

Existing Plus Project Intersection Levels of Service and Operational Deficiency Evaluation

ID	Study Intersection	Traffic Control[1]	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Project Change	Operational Deficiency?	Without Project		With Project		Project Change	Operational Deficiency?
			V/C[2] or [Delay][3]	LOS[4]	V/C[2] or [Delay][3]	LOS[4]			V/C[2] or [Delay][3]	LOS[4]	V/C[2] or [Delay][3]	LOS[4]		
1.	Mountain View Ave at Florence Ave	TS	0.547	A	0.550	A	+0.003	No	0.641	B	0.654	B	+0.013	No
2.	Mission Pl at Florence Ave	TS	0.386	A	0.390	A	+0.004	No	0.447	A	0.557	A	+0.110	No
3.	State St at Florence Ave	TS	0.602	B	0.605	B	+0.003	No	0.754	C	0.766	C	+0.012	No
4.	Project East Dwy at Florence Ave	CSS	[0.0]	A	[10.4]	B	+10.4	No	[0.0]	A	[12.8]	B	+12.8	No

Notes:

(1) AWS = All-Way Stop; CSS = Cross Street Stop

(2) V/C = Volume/Capacity

(3) Delay is shown in seconds/vehicle. Level of Service is based on average delay of the worst approach.

(4) LOS = Level of Service

Table 5
Opening Year (2023) Without Project Intersection Levels of Service

ID	Study Intersection	Traffic Control[1]	AM Peak Hour V/C[2] or [Delay][3]	AM Peak Hour LOS[4]	PM Peak Hour V/C[2] or [Delay][3]	PM Peak Hour LOS[4]
1.	Mountain View Ave at Florence Ave	TS	0.560	A	0.657	B
2.	Mission Pl at Florence Ave	TS	0.395	A	0.458	A
3.	State St at Florence Ave	TS	0.617	B	0.774	C

Notes:

(1) AWS = All-Way Stop; CSS = Cross Street Stop

(2) V/C = Volume/Capacity

(3) Delay is shown in seconds/vehicle. Level of Service is based on average delay of the worst approach.

(4) LOS = Level of Service

Table 6

Opening Year (2023) With Project Intersection Levels of Service and Operational Deficiency Evaluation

ID	Study Intersection	Traffic Control[1]	AM Peak Hour						PM Peak Hour					
			Without Project		With Project		Project Change	Operational Deficiency?	Without Project		With Project		Project Change	Operational Deficiency?
			V/C[2] or [Delay][3]	LOS[4]	V/C[2] or [Delay][3]	LOS[4]			V/C[2] or [Delay][3]	LOS[4]	V/C[2] or [Delay][3]	LOS[4]		
1.	Mountain View Ave at Florence Ave	TS	0.560	A	0.563	A	+0.003	No	0.657	B	0.670	B	+0.013	No
2.	Mission Pl at Florence Ave	TS	0.395	A	0.399	A	+0.004	No	0.458	A	0.571	A	+0.113	No
3.	State St at Florence Ave	TS	0.617	B	0.620	B	+0.003	No	0.774	C	0.786	C	+0.012	No
4.	Project East Dwy at Florence Ave	CSS	[0.0]	A	[10.4]	B	+10.4	No	[0.0]	A	[13.0]	B	+13.0	No

Notes:

(1) AWS = All-Way Stop; CSS = Cross Street Stop

(2) V/C = Volume/Capacity

(3) Delay is shown in seconds/vehicle. Level of Service is based on average delay of the worst approach.

(4) LOS = Level of Service

7. SITE ACCESS

This analysis assumes the following improvements will be constructed by the project to provide project site access:

Project West Driveway at Florence Avenue (Mission Place at Florence Avenue)

- Retain existing signalized driveway at the intersection of Mission Place and Florence Avenue.
- Reconstruct the northbound approach to provide a total width of 26 feet with one all-way lane.

Project East Driveway at Florence Avenue

- Install a northbound cross street stop-control.
- Construct the northbound approach to consist of one right-turn exit-only lane.

8. PARKING ANALYSIS

The parking requirement for the proposed automated car wash project is calculated based on the City of Huntington Park Municipal Parking Code. The City of Huntington Park Municipal Parking Code for automobile washing establishment is one parking space per 250 square feet of gross floor area plus 10 spaces for each wash lane or car wash tunnel.

The project will provide a drying area with 29 parking stalls that are equipped with vacuum posts for vehicle interior cleaning and drying the vehicle exterior after the vehicles have traveled through the wash tunnel, two accessible parking stall and two employee parking stalls for a total of 33 parking spaces. There will also be one motorcycle parking stall.

As shown in Table 7, the proposed project requires 29 parking spaces based on City Municipal Code requirements. Since the proposed project provides a drying area with a total of 33 parking spaces (29 vacuum station stalls, two accessible parking stalls and two employee parking stalls), more than adequate parking supply is forecast to be provided with a surplus of four (4) parking spaces based on the City Municipal Code requirements.

Table 7
Parking Requirement Based on City of Huntington Park Municipal Code

Proposed Use	Component	Quantity[1]	Units[2]	Parking Code Requirement	Parking Spaces
Automobile Washing	Floor Area	4,712	SF	1.0 Space : 250 SF	19
	Wash Lane / Car Wash Tunnel	1	CWT	10.0 Space : 1 CWT	10
	Total Parking				**29**
Available Parking Supply, including 29 vacumm stalls, 2 accessible parking stalls, 2 employee stalls and 1 motorcycle stall [See Figure 3]					33
Parking Surplus (+) / Deficit (-) for the Proposed Project					**+4**

Notes:

(1) The total building area is 4,712 square feet including the car wash tunnel, employee break room, restroom and other facilities.

(2) SF = Square Feet; CWT = Car Wash Tunnel

(3) City of Huntington Park Municipal Code, Section 9-3.804. One space for each 250 SF of floor area, plus 10 spaces for each wash lane.

9. DRIVE-THROUGH LANE QUEUEING ANALYSIS

This queueing analysis estimates the drive-through lane queueing demand for the proposed project based on available historic observations at 3 existing similar car wash facilities.

The proposed drive-through lane configuration provides queueing storage for approximately three vehicles from the car wash tunnel entrance to the pay stations and barrier arm gates plus storage for another nine vehicles from the pay stations to the entrance of the car wash drive-through lane for a total storage of approximately 12 vehicles. There will be a drying area with 29 parking stalls that are equipped with vacuum posts for vehicle interior cleaning and drying the vehicle exterior after the vehicles have traveled through the wash tunnel, two accessible parking stalls and two employee parking stalls for a total of 33 parking spaces. There will also be one motorcycle parking stall. The parking lot aisle for the drying area is available to serve as an overflow to accommodate seven additional queueing vehicles to enter the car wash drive-through lane. The project is proposed to have one car wash tunnel that could accommodate approximately 5 vehicles through different stages of the car wash.

SIMILAR CAR WASH SITE OBERVATION AND COUNTS

These 3 similar car wash facilities were chosen as survey sites because they are comparable to the proposed project site in terms of site configuration, typical operations, and available amenities. Field observations of drive-through lane queues were previously conducted at the following 3 existing car wash facility locations:

1. Rapids Express Carwash – 2045 North Tustin Street, Orange CA (19 vacuum stalls).
2. Scrub Bot Express Car Wash – 1807 North Main Street, Santa Ana, CA (21 vacuum stalls).
3. Speedie Clean Express Car Wash – 2035 North Tustin Avenue, Santa Ana, CA (16 vacuum stalls).

The drive-through vehicular queues and number of parked vehicles were observed in 15-minute intervals from 7:00 AM to 8:00 PM during a typical weekday (Tuesday, July 10, 2018) and a typical Saturday (July 14, 2018). The observations were conducted using field surveys with technicians on-site.

OBSERVED QUEUE LENGTH

Table 8 and Table 9 summarize the results of the observed drive-through lane vehicular queue data collected at the 3 similar car wash facility locations during a typical Tuesday and a typical Saturday, respectively. The drive-through queue length summary in Table 8 and Table 9 present the observed average, 85th-percentile, and peak queue length.

As shown in Table 8, the peak activity at each similar car wash facility were observed to occur intermittently during the late morning time period that coincided with the beginning of a typical work day and the afternoon peak period that coincided with the end of a typical work day. The queueing length receded during less active times throughout the day. The peak queue length within each 15-minute interval were observed to be sustained for only a few minutes at a time.

As shown in Table 8, the Tuesday maximum peak vehicular queue length observed was 18 vehicles at the Rapids Express site, 3 vehicles at the Scrub Bots Express site, and 9 vehicles at the Speedie Clean Express site. The maximum hourly average queue for the Tuesday counts for the 3 survey sites is 7.0 vehicles during the evening peak period. The maximum hourly 85th-percentile queue is 13.2 vehicles during the evening peak period. Figure 26 shows graphical results of the Tuesday average queue, the 85th-percentile queue, and the peak queue for each time period throughout the day.

As shown in Table 9, the Saturday maximum peak vehicular queue length observed was 22 vehicles at the Rapids Express site, 5 vehicles at the Scrub Bots Express site, and 8 vehicles at the Speedie Clean Express

site. The maximum hourly average queue for the Saturday counts for the 3 survey sites is 11.0 vehicles during the afternoon peak period. The maximum hourly 85th-percentile queue is 17.8 vehicles during the afternoon peak period. Figure 27 shows graphical results of the Saturday average queue, the 85th-percentile queue, and the peak queue for each time period throughout the day.

PROJECTED QUEUE LANE REQUIREMENT FOR THE PROPOSED PROJECT

Assuming the proposed project would experience queueing activity similar to the three survey sites, the typical peak queueing length is estimated to be approximately 18 vehicles during peak periods based on the highest 85th-percentile queue length. Since the proposed project provides a vehicular queue storage capacity for approximately 12 vehicles with the parking lot aisle for the drying area is available to serve as an overflow to accommodate seven additional queueing vehicles for a total of 19 vehicles, the overall drive-through storage capacity for the project site is forecast to be adequate to accommodate the peak queue.

Table 8

Summary of Tuesday Queuing Length and Parking Demand Observation (July 10, 2018)

Time Period	Rapids Express		Scrub Bot Express		Speedie Clean Express		Hourly Peak		Hourly Average		Hourly 85th Percentile	
	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking
7:00 AM - 7:15 AM	2	3	0	1	1	2	2	3	1.0	2.0	1.7	2.7
7:15 AM - 7:30 AM	3	3	2	1	2	8	3	8	2.3	4.0	2.7	6.5
7:30 AM - 7:45 AM	0	5	1	3	4	5	4	5	1.7	4.3	3.1	5.0
7:45 AM - 8:00 AM	0	3	2	3	2	5	2	5	1.3	3.7	2.0	4.4
8:00 AM - 8:15 AM	1	4	1	7	2	3	2	7	1.3	4.7	1.7	6.1
8:15 AM - 8:30 AM	0	9	0	5	3	7	3	9	1.0	7.0	2.1	8.4
8:30 AM - 8:45 AM	1	5	0	6	4	11	4	11	1.7	7.3	3.1	9.5
8:45 AM - 9:00 AM	1	13	0	2	5	11	5	13	2.0	8.7	3.8	12.4
9:00 AM - 9:15 AM	3	12	1	4	8	10	8	12	4.0	8.7	6.5	11.4
9:15 AM - 9:30 AM	2	20	0	6	4	17	4	20 *	2.0	14.3 *	3.4	19.1 *
9:30 AM - 9:45 AM	0	11	1	3	4	11	4	11	1.7	8.3	3.1	11.0
9:45 AM - 10:00 AM	1	15	1	5	3	9	3	15	1.7	9.7	2.4	13.2
10:00 AM - 10:15 AM	0	19	0	4	4	11	4	19	1.3	11.3	2.8	16.6
10:15 AM - 10:30 AM	0	14	0	1	7	13	7	14	2.3	9.3	4.9	13.7
10:30 AM - 10:45 AM	1	15	1	5	5	14	5	15	2.3	11.3	3.8	14.7
10:45 AM - 11:00 AM	1	12	1	9	9	8	9	12	3.7	9.7	6.6	11.1
11:00 AM - 11:15 AM	1	11	0	9	5	9	5	11	2.0	9.7	3.8	10.4
11:15 AM - 11:30 AM	2	12	2	8	7	7	7	12	3.7	9.0	5.5	10.8
11:30 AM - 11:45 AM	0	14	1	4	5	13	5	14	2.0	10.3	3.8	13.7
11:45 AM - 12:00 PM	1	14	2	5	6	12	6	14	3.0	10.3	4.8	13.4
12:00 PM - 12:15 PM	1	11	1	7	8	14	8	14	3.3	10.7	5.9	13.1
12:15 PM - 12:30 PM	0	12	3	8	4	13	4	13	2.3	11.0	3.7	12.7
12:30 PM - 12:45 PM	2	10	0	8	4	13	4	13	2.0	10.3	3.4	12.1
12:45 PM - 1:00 PM	0	11	1	8	7	8	7	11	2.7	9.0	5.2	10.1
1:00 PM - 1:15 PM	2	10	3	9	4	8	4	10	3.0	9.0	3.7	9.7
1:15 PM - 1:30 PM	1	12	0	9	5	11	5	12	2.0	10.7	3.8	11.7
1:30 PM - 1:45 PM	5	14	1	8	1	15	5	15	2.3	12.3	3.8	14.7
1:45 PM - 2:00 PM	4	14	0	7	6	12	6	14	3.3	11.0	5.4	13.4
2:00 PM - 2:15 PM	6	17	1	7	1	13	6	17	2.7	12.3	4.5	15.8
2:15 PM - 2:30 PM	3	15	1	8	4	12	4	15	2.7	11.7	3.7	14.1
2:30 PM - 2:45 PM	5	16	0	10	1	17	5	17	2.0	14.3 *	3.8	16.7
2:45 PM - 3:00 PM	7	12	0	11	1	14	7	14	2.7	12.3	5.2	13.4
3:00 PM - 3:15 PM	3	16	0	9	2	6	3	16	1.7	10.3	2.7	13.9
3:15 PM - 3:30 PM	4	15	1	8	3	14	4	15	2.7	12.3	3.7	14.7
3:30 PM - 3:45 PM	2	19	1	7	1	17	2	19	1.3	14.3 *	1.7	18.4
3:45 PM - 4:00 PM	2	15	0	7	5	13	5	15	2.3	11.7	4.1	14.4
4:00 PM - 4:15 PM	3	15	0	1	7	7	7	15	3.3	7.7	5.8	12.6
4:15 PM - 4:30 PM	6	12	2	4	4	13	6	13	4.0	9.7	5.4	12.7
4:30 PM - 4:45 PM	5	13	1	4	1	11	5	13	2.3	9.3	3.8	12.4
4:45 PM - 5:00 PM	4	14	0	5	3	13	4	14	2.3	10.7	3.7	13.7
5:00 PM - 5:15 PM	6	9	0	3	3	10	6	10	3.0	7.3	5.1	9.7
5:15 PM - 5:30 PM	3	16	2	4	2	8	3	16	2.3	9.3	2.7	13.6
5:30 PM - 5:45 PM	6	14	0	7	4	8	6	14	3.3	9.7	5.4	12.2
5:45 PM - 6:00 PM	3	15	3	7	1	8	3	15	2.3	10.0	3.0	12.9
6:00 PM - 6:15 PM	5	17	0	13	2	13	5	17	2.3	14.3 *	4.1	15.8
6:15 PM - 6:30 PM	4	9	0	9	0	12	4	12	1.3	10.0	2.8	11.1
6:30 PM - 6:45 PM	5	11	1	9	5	9	5	11	3.7	9.7	5.0	10.4
6:45 PM - 7:00 PM	3	14	1	11	2	13	3	14	2.0	12.7	2.7	13.7
7:00 PM - 7:15 PM	1	17	0	11	0	8	1	17	0.3	12.0	0.7	15.2
7:15 PM - 7:30 PM	4	12	0	12	1	9	4	12	1.7	11.0	3.1	12.0
7:30 PM - 7:45 PM	1	14	0	12	1	12	1	14	0.7	12.7	1.0	13.4
7:45 PM - 8:00 PM	18	4	1	11	2	9	18 *	11	7.0 *	8.0	13.2 *	10.4
Site Peak	18	20	3	13	9	17						
Site Average	2.8	12.3	0.8	6.6	3.6	10.6						
Site 85th Percentile	5.0	16.0	2.0	9.4	6.0	13.4						

Table 9

Summary of Saturday Queuing Length and Parking Demand Observation (July 14, 2018)

Time Period	Rapids Express		Scrub Bot Express		Speedie Clean Express		Hourly Peak		Hourly Average		Hourly 85th Percentile	
	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking
7:00 AM - 7:15 AM	2	7	0	6	3	5	3	7	1.7	6.0	2.7	6.7
7:15 AM - 7:30 AM	5	11	1	10	2	13	5	13	2.7	11.3	4.1	12.4
7:30 AM - 7:45 AM	3	12	0	12	3	11	3	12	2.0	11.7	3.0	12.0
7:45 AM - 8:00 AM	2	11	0	10	1	12	2	12	1.0	11.0	1.7	11.7
8:00 AM - 8:15 AM	5	15	2	8	0	10	5	15	2.3	11.0	4.1	13.5
8:15 AM - 8:30 AM	4	14	0	10	2	14	4	14	2.0	12.7	3.4	14.0
8:30 AM - 8:45 AM	6	15	0	10	6	15	6	15	4.0	13.3	6.0	15.0
8:45 AM - 9:00 AM	3	17	0	6	2	18	3	18	1.7	13.7	2.7	17.7
9:00 AM - 9:15 AM	6	18	1	10	1	13	6	18	2.7	13.7	4.5	16.5
9:15 AM - 9:30 AM	4	16	1	11	3	14	4	16	2.7	13.7	3.7	15.4
9:30 AM - 9:45 AM	4	17	1	10	0	14	4	17	1.7	13.7	3.1	16.1
9:45 AM - 10:00 AM	6	16	3	14	4	15	6	16	4.3	15.0	5.4	15.7
10:00 AM - 10:15 AM	5	14	3	21	3	19	5	21 *	3.7	18.0 *	4.4	20.4 *
10:15 AM - 10:30 AM	4	16	0	11	1	16	4	16	1.7	14.3	3.1	16.0
10:30 AM - 10:45 AM	5	18	1	12	4	19	5	19	3.3	16.3	4.7	18.7
10:45 AM - 11:00 AM	9	17	2	15	2	15	9	17	4.3	15.7	6.9	16.4
11:00 AM - 11:15 AM	9	18	4	15	4	16	9	18	5.7	16.3	7.5	17.4
11:15 AM - 11:30 AM	9	14	3	15	4	17	9	17	5.3	15.3	7.5	16.4
11:30 AM - 11:45 AM	11	15	5	18	7	21	11	21 *	7.7	18.0 *	9.8	20.1
11:45 AM - 12:00 PM	9	16	3	19	6	14	9	19	6.0	16.3	8.1	18.1
12:00 PM - 12:15 PM	14	17	1	20	4	15	14	20	6.3	17.3	11.0	19.1
12:15 PM - 12:30 PM	10	15	0	18	5	15	10	18	5.0	16.0	8.5	17.1
12:30 PM - 12:45 PM	6	16	1	9	6	21	6	21 *	4.3	15.3	6.0	19.5
12:45 PM - 1:00 PM	15	15	2	12	5	18	15	18	7.3	15.0	12.0	17.1
1:00 PM - 1:15 PM	14	18	5	13	6	19	14	19	8.3	16.7	11.6	18.7
1:15 PM - 1:30 PM	14	18	4	15	7	20	14	20	8.3	17.7	11.9	19.4
1:30 PM - 1:45 PM	22	4	3	16	8	21	22 *	21 *	11.0 *	13.7	17.8 *	19.5
1:45 PM - 2:00 PM	21	4	0	15	4	16	21	16	8.3	11.7	15.9	15.7
2:00 PM - 2:15 PM	19	7	2	13	0	20	19	20	7.0	13.3	13.9	17.9
2:15 PM - 2:30 PM	14	3	0	15	2	15	14	15	5.3	11.0	10.4	15.0
2:30 PM - 2:45 PM	17	5	0	14	4	13	17	14	7.0	10.7	13.1	13.7
2:45 PM - 3:00 PM	18	4	2	12	1	15	18	15	7.0	10.3	13.2	14.1
3:00 PM - 3:15 PM	18	2	1	14	5	21	18	21 *	8.0	12.3	14.1	18.9
3:15 PM - 3:30 PM	20	5	0	13	3	19	20	19	7.7	12.3	14.9	17.2
3:30 PM - 3:45 PM	17	3	0	13	3	16	17	16	6.7	10.7	12.8	15.1
3:45 PM - 4:00 PM	22	6	3	12	7	17	22 *	17	10.7	11.7	17.5	15.5
4:00 PM - 4:15 PM	19	2	2	12	0	14	19	14	7.0	9.3	13.9	13.4
4:15 PM - 4:30 PM	17	0	4	13	5	20	17	20	8.7	11.0	13.4	17.9
4:30 PM - 4:45 PM	18	1	1	16	3	15	18	16	7.3	10.7	13.5	15.7
4:45 PM - 5:00 PM	16	3	1	16	5	9	16	16	7.3	9.3	12.7	13.9
5:00 PM - 5:15 PM	13	2	2	12	2	11	13	12	5.7	8.3	9.7	11.7
5:15 PM - 5:30 PM	13	1	1	15	1	11	13	15	5.0	9.0	9.4	13.8
5:30 PM - 5:45 PM	12	0	0	13	1	15	12	15	4.3	9.3	8.7	14.4
5:45 PM - 6:00 PM	12	2	2	14	5	16	12	16	6.3	10.7	9.9	15.4
6:00 PM - 6:15 PM	10	0	3	13	3	19	10	19	5.3	10.7	7.9	17.2
6:15 PM - 6:30 PM	9	0	2	14	3	17	9	17	4.7	10.3	7.2	16.1
6:30 PM - 6:45 PM	9	0	3	13	2	11	9	13	4.7	8.0	7.2	12.4
6:45 PM - 7:00 PM	8	0	0	10	1	9	8	10	3.0	6.3	5.9	9.7
7:00 PM - 7:15 PM	7	0	0	12	1	7	7	12	2.7	6.3	5.2	10.5
7:15 PM - 7:30 PM	8	0	0	8	2	10	8	10	3.3	6.0	6.2	9.4
7:30 PM - 7:45 PM	6	0	1	8	4	11	6	11	3.7	6.3	5.4	10.1
7:45 PM - 8:00 PM	6	0	0	13	2	12	6	13	2.7	8.3	4.8	12.7
Site Peak	22	18	5	21	8	21						
Site Average	10.7	8.7	1.5	12.9	3.2	15.0						
Site 85th Percentile	18.0	17.0	3.0	15.4	5.4	19.0						

Figure 26

Tuesday Hourly Queue Length Observation

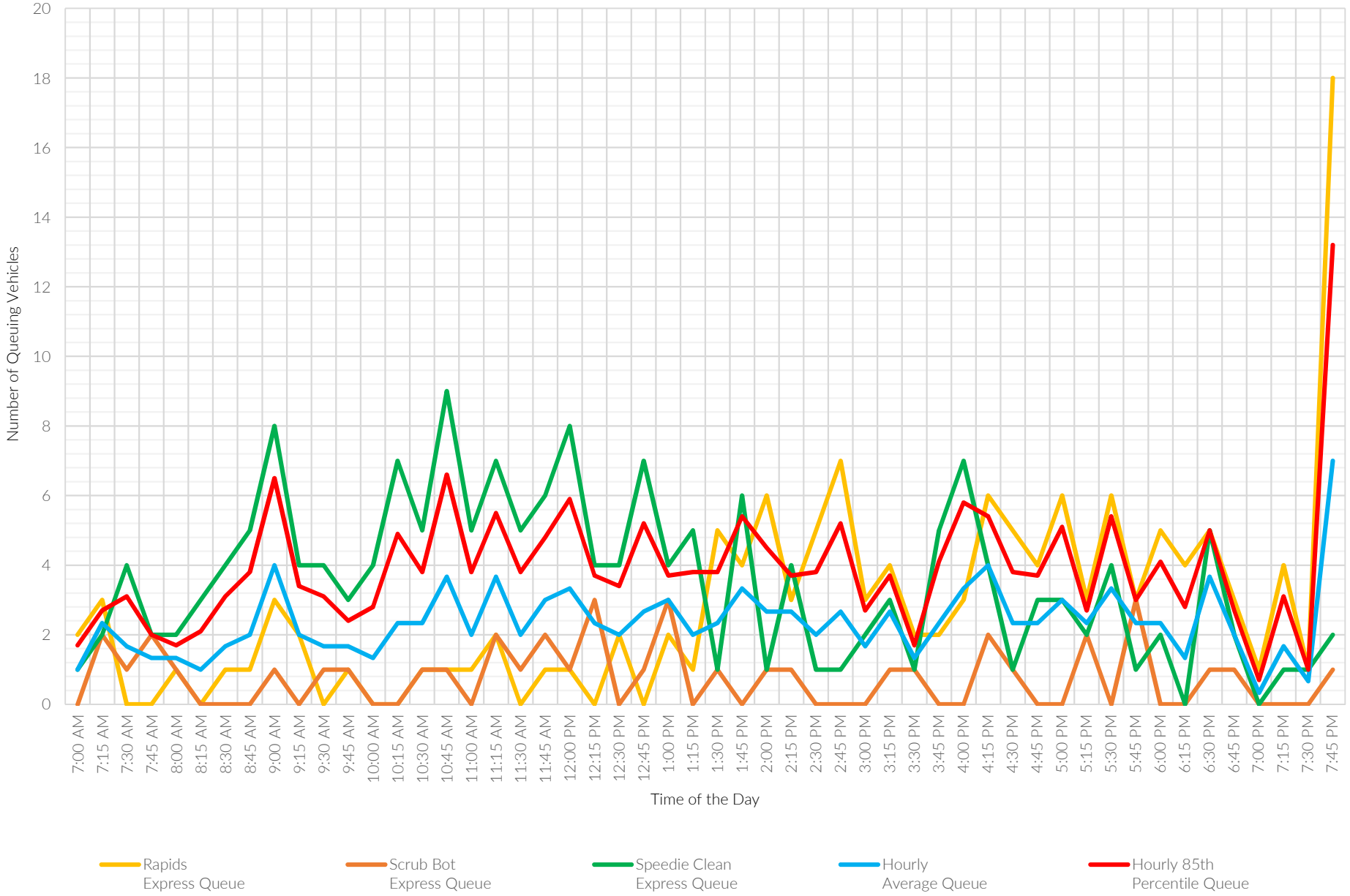
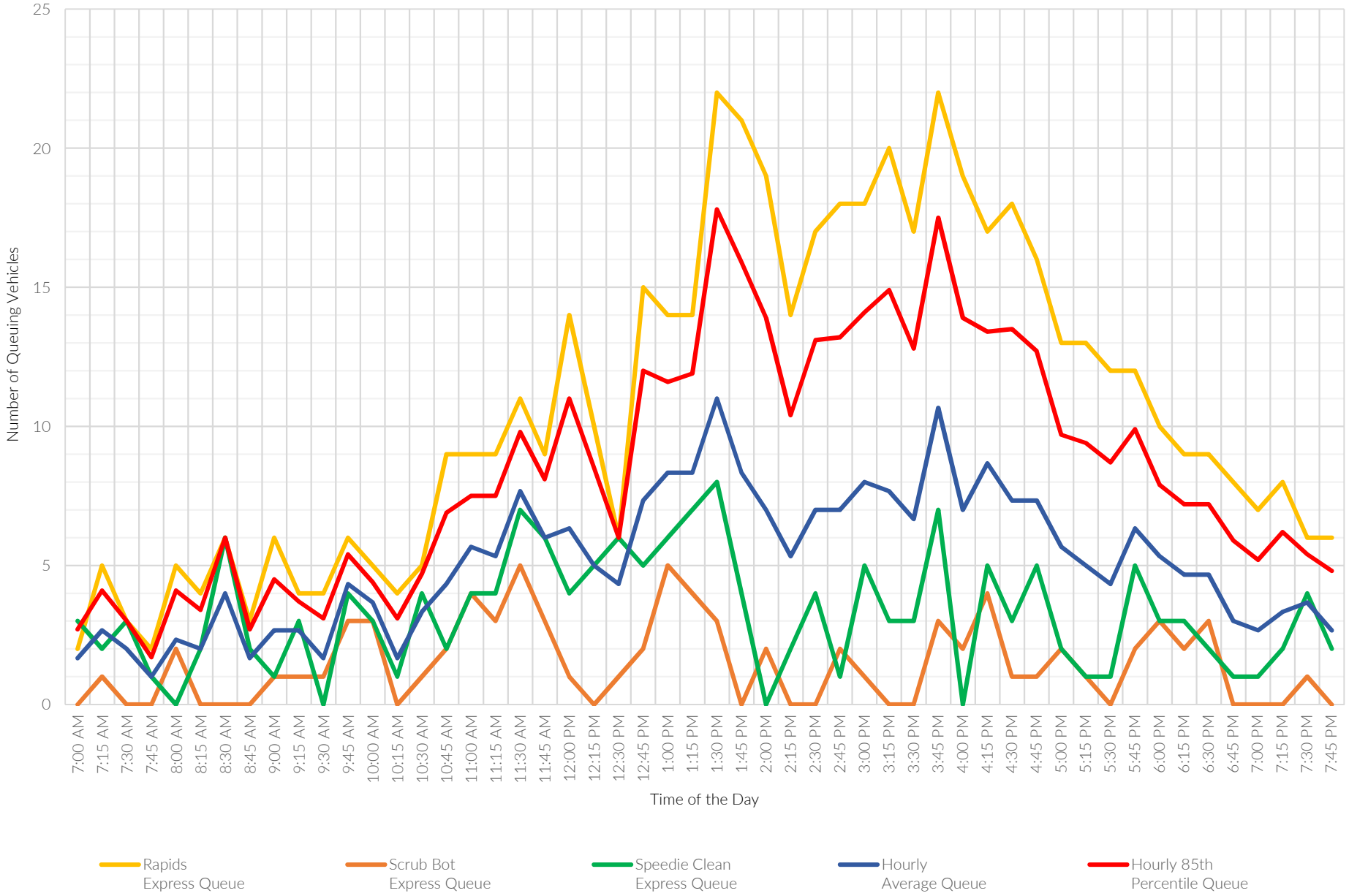


Figure 27

Saturday Hourly Queue Length Observation



10. VEHICLE MILES TRAVELED (VMT) ASSESSMENT

This sections presents the Vehicle Miles Traveled (VMT) assessment for the project.

BACKGROUND

California Senate Bill 743 (SB 743) directs the State Office of Planning and Research (OPR) to amend the California Environmental Quality Act (CEQA) Guidelines for evaluating transportation impacts to provide alternatives to Level of Service that "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." In December 2018, the California Natural Resources Agency certified and adopted the updated CEQA Guidelines package. The amended CEQA Guidelines, specifically Section 15064.3, recommend the use of Vehicle Miles Travelled (VMT) as the primary metric for the evaluation of transportation impacts associated with land use and transportation projects. In general terms, VMT quantifies the amount and distance of automobile travel attributable to a project or region. Agencies may currently opt-in to applying the updated CEQA guidelines for VMT analysis and implementation is required State-wide by July 1, 2020.

VMT ASSESSMENT

The City of Huntington Park has not established VMT analysis procedures at this time; therefore, the project-related VMT impact has been assessed qualitatively based on the VMT screening guidance from the Los Angeles County Public Works Transportation Impact Analysis Guidelines. The guidelines provides the following potential screening criteria for certain land development projects that may be presumed to result in a less than significant VMT impact:

- Non-retail projects generating less than 110 trips per day.
- Local serving retail less than 50,000 square feet of gross floor area
- Projects near transit stations or major transit stop.
- Residential projects with a high percentage of affordable housing.

Presumption of Less Than Significant VMT Impact for Local Serving Retail

The 4,712 square foot automated car wash project contains less than 50,000 square feet of gross floor area of retail. The proposed car wash is also a local-serving facility. Therefore, it may be presumed that the retail portion of the project has a less than significant impact to vehicle miles traveled (VMT) based on the Transportation Impact Analysis Guidelines established by the County of Los Angeles Department of Public Works.

11. CONCLUSIONS

SITE ACCESS

Project West Driveway at Florence Avenue (Mission Place at Florence Avenue)

- Retain existing signalized driveway at the intersection of Mission Place and Florence Avenue.
- Reconstruct the northbound approach to provide a total width of 26 feet with one all-way lane.

Project East Driveway at Florence Avenue

- Install a northbound cross street stop-control.
- Construct the northbound approach to consist of one right-turn exit-only lane.

GENERAL RECOMMENDATIONS

Figure 28 summarizes the circulation recommendations for the proposed project.

All roadway design, traffic signing and striping, and traffic control improvements relating to the proposed project should be constructed in accordance with applicable engineering standards and to the satisfaction of the City of Huntington Park.

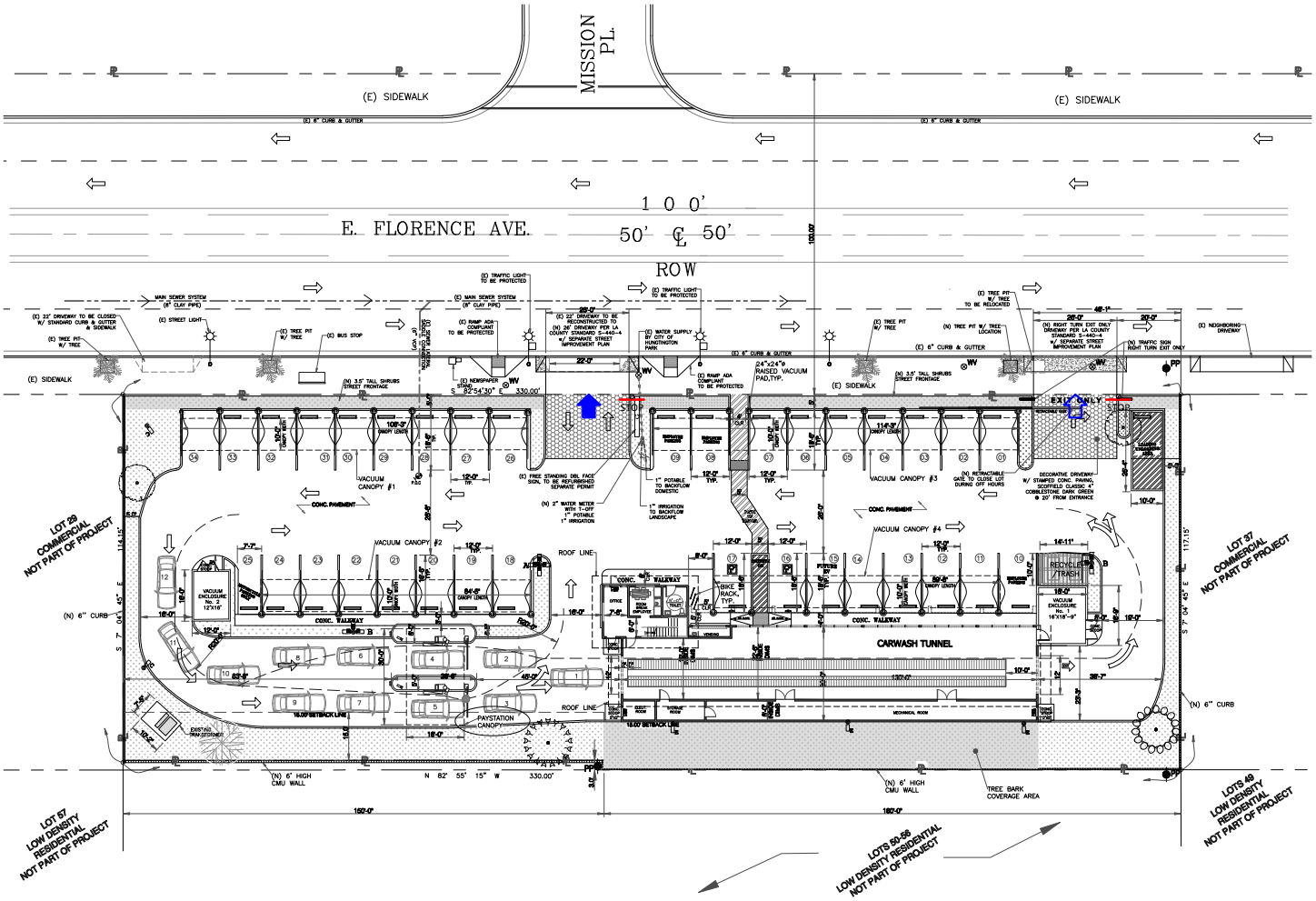
Site-adjacent roadways should be constructed or repaired at their ultimate half-section width, including landscaping and parkway improvements in conjunction with development, or as otherwise required by the City of Huntington Park.

On-site traffic signing and striping plans should be submitted for City of Huntington Park approval in conjunction with detailed construction plans for the project.

Off-street parking should be provided to meet City of Huntington Park Municipal Code requirements.

The final grading, landscaping, and street improvement plans should demonstrate that sight distance standards are met in accordance with applicable City of Huntington Park/California Department of Transportation sight distance standards.

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



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Off-street parking should be provided to meet City of Huntington Park Municipal Code requirements.

The final grading, landscaping, and street improvement plans should demonstrate that sight distance standards are met in accordance with applicable City of Huntington Park/California Department of Transportation sight distance standards.

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

N

Legend

STOP Stop Sign

Full Access Driveway

Right Turn Out Only Access Driveway

Figure 28
Circulation Recommendations

APPENDICES

Appendix A Glossary

Appendix B Scoping Agreement

Appendix C Volume Count Worksheets

Appendix D Existing Volume Adjustment Factor Calculations

Appendix E Level of Service Worksheets

Appendix F Similar Car Wash Facilities Survey Data

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

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

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

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

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

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

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

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

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

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

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

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

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

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

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

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

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

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

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

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

FORCED FLOW: Opposite of free flow.

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

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

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

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

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

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

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

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

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

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

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

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

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

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

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

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

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

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

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

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queueing to occur.

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

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

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

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

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

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

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

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

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

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

APPENDIX B

SCOPING AGREEMENT

SCOPING AGREEMENT FOR CITY OF HUNTINGTON PARK TRAFFIC IMPACT ANALYSIS

This Memorandum of Understanding acknowledges the City of Huntington Park Traffic Impact Analysis requirements for the following project. The Traffic Impact Analysis will be completed in accordance with Los Angeles County TIA guidelines.

Project Name: 3100 Florence Avenue Car Wash Project

Project Address/Location: 3100 East Florence Avenue

Governmental Jurisdiction: City of Huntington Park

Project Description and Land Use: 4,712 square foot car wash with a car wash tunnel, including 29 vacuum stalls, 2 accessible parking stall, 2 employee stalls and 1 motorcycle stall. (See Figure 3)

	Consultant	Developer
Name:	Tom Huang	Dennis Lee
Firm:	GANDDINI GROUP, INC.	LEEDCO ENGINEERS, INC
Address:	550 Parkcenter Drive, Suite 202	3380 Flair Drive, Suite 225
	Santa Ana, CA 92705	El Monte, CA 91731
Telephone:	714-795-3100 x 102	626-234-2247
E-mail:	tom@ganddini.com	leedco@aol.com

Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 10th Edition, 2017; San Diego Association of Governments (SANDAG); and customized trip rates based on similar car wash facilities (see Table 1)

	Morning		Evening		
	In	Out	In	Out	Daily
Existing	24	7	11	27	383
Proposed	35	29	67	67	944
Total	+11	+22	+56	+40	+561

Project Full Occupancy Year: 2022

Internal Trip Capture Allowance	No	(- Trip Discount)
Pass-By Trip Allowance	No	(- Trip Discount)

Table 1 shows the custom trip generation rates based on available historic survey counts conducted at two similar automatic car wash facilities at Matt's Express Carwash in the City of Rialto on January 19, 2014 and at Matt's Express Carwash in the City of Redlands on December 14, 2016. Appendix A shows the car wash facility count survey count sheets. The survey counts were conducted on a typical weekday over the entire hours of operations showing the "time of the day". The morning (AM) and afternoon (PM) peak hour trip rates are derived from the highest one-hour within of the typical peak periods of adjacent street traffic between 7 and 9 AM in the morning and between 4 and 6 PM in the afternoon. Based on input from the operators of similar car wash facilities, the monthly activity levels are consistent between the summer season and other non-summer seasons. As shown in Table 1 in comparison to other available trip generation rates published by Institute of Transportation Engineers (ITE) and San Diego Association of Governments (SANDAG), the customized trip rates based on the similar car wash facilities are more conservative than the published trip rates by ITE and SANDAG.

Analysis Conditions:

1. Existing (2020)
2. Existing Plus Project
3. Opening Year (2023) Without Project
4. Opening Year (2023) With Project

Study Intersections: (See Figure 2)

1. Mountain View Avenue @ Florence Avenue
2. Mission Place @ Florence Avenue
3. State Street @ Florence Avenue
4. Project East Driveway @ Florence Avenue

2020 Base Volumes: (See Appendix B)

Due to the COVID-19 lockdown, current 2020 traffic patterns may not be normalized for an extended period of time. Therefore, it is recommended that the pre-lockdown 2020 base traffic volumes at the study intersections be estimated using a seasonal factor estimated from a comparison of nearby freeway segment volumes between pre-lockdown February 2020 conditions and current August 2020 summer conditions. As anticipated, the August 2020 summer volumes will be lower than the pre-lockdown February 2020 volumes. New traffic conducted during August 2020 will be increased using the estimated seasonal factor to estimate the pre-lockdown February 2020 base volumes. Appendix B includes the seasonal factor calculations based on comparison of various I-10 Freeway segments near the study area. As shown in Appendix B, the seasonal factors to convert August 2020 summer counts to pre-lockdown February 2020 base volumes are 1.136 for AM peak hour and 1.029 for PM peak hour. To be more conservative, the highest of 3 values for each peak hour for the combined travel directions are selected as the seasonal factors.

Opening Year 2022 Traffic Growth

As shown in Table 2, an annual ambient growth rate of 1.4% is estimated based on the Los Angeles County Congestion Management Program (CMP) General Traffic Volume Growth Factors for 2015 and 2020 for the Regional Statistical Area of Downey (RSA21). The Opening Year 2022 will included a 1.4% annual growth for 2 years (total growth factor = 1.028) over the 2020 base volumes.

Trip Distribution: (See Figures 3 and 4)

The inbound and outbound turning movement volumes for the two project driveways will be estimated based on trip generation calculations for the proposed land uses shown in Table 1 and the project trip distribution patterns shown in Figure 3 and Figure 4.

Parking Analysis:

The parking requirements for the proposed automated car wash project will be calculated based on the City of Huntington Park Municipal Parking Code (see Table 3). The City of Huntington Park Municipal Parking Code for automobile washing establishment is one parking space per 250 square feet of gross floor area plus 10 spaces for each wash lane or car wash tunnel.

The average and peak hour parking demand will be estimated based on available historical 2018 survey data at 3 similar car wash facilities. Appendix C contains the historic 2018 drive-through lane queuing survey data.

Queueing Analysis:

The average and peak hour queueing lengths will be estimated based on available historical 2018 survey data at 3 similar car wash facilities. Appendix C contains the historic 2018 drive-through lane queuing survey data.

Potential Screening Checks:

The 4,712 square foot automated car wash project contains less than 50,000 square feet of gross floor area of retail. The proposed car wash is also a local-serving facility. Therefore, it may be presumed that the retail portion of the project has a less than significant impact to vehicle miles traveled (VMT) based on the Transportation Impact Analysis Guidelines established by the County of Los Angeles Department of Public Works.

Items to be provided by the City of Huntington Park

- Please provide us with a list of other approved cumulative developments in the City to be incorporated into the future traffic forecast.

Prepared by:

Consultant's Representative — 08.25.2020 Date

19278

Approved by:

City of Huntington Park Representative — 04-15-2021 Date

Yunus Rahi, PhD, PE, TE, City Engineer

Table 1
Project Trip Generation

Trip Generation Rates										
Project				AM Peak			PM Peak			Weekday Daily
No.	Land Use	Code[1]	Units[2]	In %	Out %	Total	In %	Out %	Total	
1	Medical-Dental Office Building	ITE 720	TSF	78%	22%	2.78	28%	72%	3.46	34.80
2	Automated Car Wash	Survey[3]	Site	55%	45%	64.00	50%	50%	134.00	944.00
3	Automated Car Wash	ITE 948	CWT				50%	50%	77.50	
4	Automatic Car Wash	SANDAG	Site	50%	50%	36.00	50%	50%	81.00	900.00

Trips Generated									
Project			AM Peak			PM Peak			Weekday Daily
No.	Land Use	Quantity[2]	In	Out	Total	In	Out	Total	
	Existing Land Use[4]								
1	Medical-Dental Office Building	11.000 TSF	24	7	31	11	27	38	383
	Proposed Project								
2	Automated Car Wash	1 Site	35	29	64	67	67	134	944
Project Net Trips			+11	+22	+33	+56	+40	+96	+561

Notes:

(1) ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; XXX = Land Use Code

San Diego Association of Governments (SANDAG), Brief Guide of Vehicular Traffic Generation Rates for the San Diego Area, April 2002.

(2) TSF = Thousand Square Feet; CWT = Car Wash Tunnel

(3) Survey counts of the existing Matt's Express Carwash facility located in the City of Rialto and Matt's Express Carwash facility located in the City of Redlands (see Appendix A)

(4) Existing trip credit for existing building estimated based on approximate building size.

Table 2
Annual Growth Rate Calculation

Regional Statistical Area (RSA)	Year 1		Year 2		Overall Growth		Annual Growth	
	Year	Growth Factor[1]	Year	Growth Factor[1]	Years of Growth	Growth Factor	Growth Factor	Growth Rate
21 Vernon	2015	1.073	2020	1.146	5	1.073	1.014	1.4%

Notes:

(1) Los Angeles County Congestion Management Program (CMP) General Traffic Volume Growth Factors (Exhibit D-1)

Table 3
Parking Requirement Based on City of Huntington Park Municipal Code

Proposed Use	Component	Quantity[1]	Units[2]	Parking Code Requirement	Parking Spaces
Automobile Washing	Floor Area	4,712	SF	1.0 Space : 250 SF	19
	Wash Lane / Car Wash Tunnel	1	CWT	10.0 Space : 1 CWT	10
	Total Parking				**29**
Available Parking Supply, including **29** vacumm stalls, **2** accessible parking stall, 2 employee stalls and 1 motorcycle stall [See Figure **3**]					33
Parking Surplus (+) / Deficit (-) for the Proposed Project					**+4**

Notes:

(1) The total building area is 4,712 square feet including the car wash tunnel, employee break room, restroom and other facilities.

(2) SF = Square Feet; CWT = Car Wash Tunnel

(3) City of Huntington Park Municipal Code, Section 9-3.804. One space for each 250 SF of floor area, plus 10 spaces for each wash lane.

Legend

Study Intersection

(#) Project Driveway

Figure 1
Project Location Map

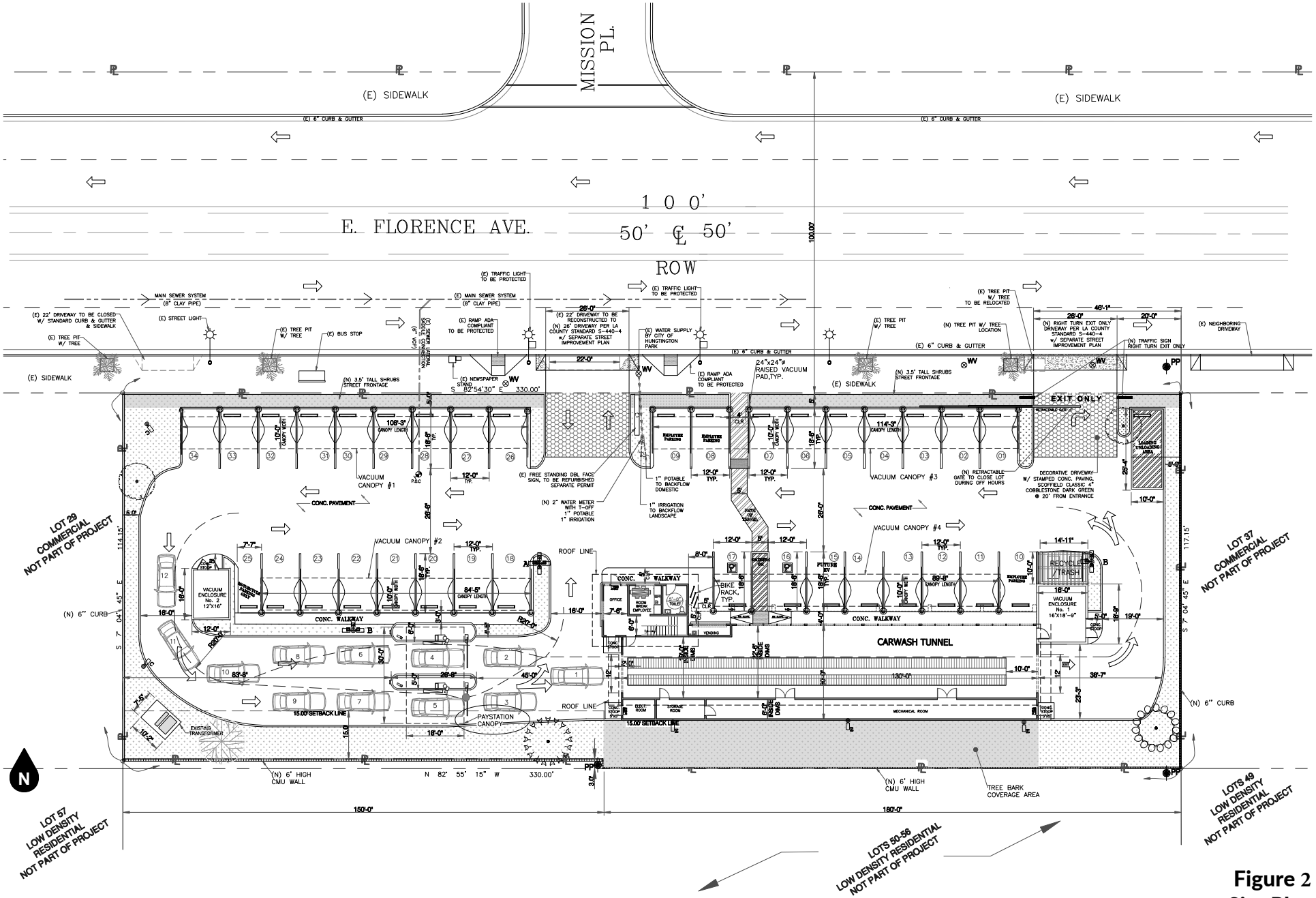
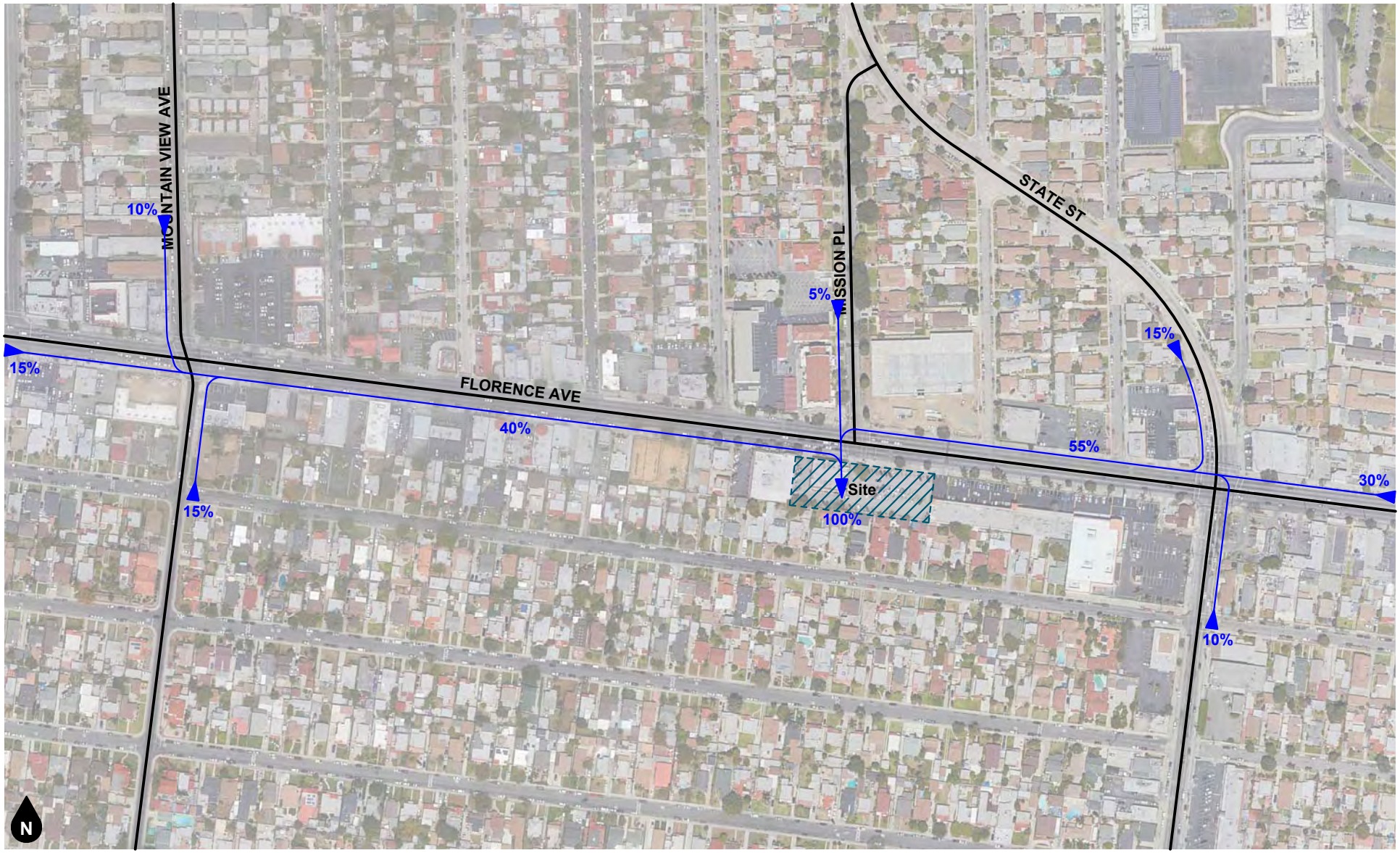


Figure 2
Site Plan

Legend

10% Percent From Project

Figure 3
Project Outbound Trip Distribution



Legend

10% Percent To Project

Figure 4
Project Inbound Trip Distribution

Appendix A

Similar Car Wash Facility Trip Generation Survey Data

Matt's Express Carwash Maximum Trip Generation Calculations

Location	Peak Hour						Daily
	Morning			Evening			
	In	Out	Total	In	Out	Total	
Redlands	35	29	64	48	51	99	926
Rialto	29	29	58	67	67	134	944
Maximum	35	29	64	67	67	134	944

Appendix A - Similar Car Wash Facility Traffic Survey

City of Redlands
Matt's Express Car Wash
SWC of Tennessee Street and Lugonia Avenue
24 Hour Driveway Counts

	North Driveway		South Driveway		TOTAL OF BOTH DRIVEWAYS					
	Entering	Exiting	Entering	Exiting	Entering	Exiting				
	WB	EB	WB	EB	WB	EB				
0:00	0	0	0	0	0	0				
0:15	0	0	0	0	0	0				
0:30	0	0	0	0	0	0				
0:45	0	0	0	0	0	0				
1:00	0	0	0	0	0	0				
1:15	0	0	0	0	0	0				
1:30	0	0	0	0	0	0				
1:45	0	0	0	0	0	0				
2:00	0	0	0	0	0	0				
2:15	0	0	0	0	0	0				
2:30	0	0	0	0	0	0				
2:45	0	0	0	0	0	0				
3:00	0	0	0	0	0	0				
3:15	0	0	0	0	0	0				
3:30	0	0	0	0	0	0				
3:45	0	0	0	0	0	0				
4:00	0	0	0	0	0	0				
4:15	0	0	0	0	0	0				
4:30	0	0	0	0	0	0				
4:45	0	0	1	0	1	0				
5:00	0	0	0	1	0	1				
5:15	0	0	0	0	0	0				
5:30	1	0	0	0	1	0				
5:45	0	0	1	1	1	1				
6:00	0	0	0	0	0	0				
6:15	0	0	0	0	0	0				
6:30	1	0	0	0	1	0				
6:45	0	0	0	0	0	0	In	Out	Total	
7:00	1	1	2	2	3	3	4	3	7	
7:15	0	0	0	0	0	0	9	3	12	
7:30	0	0	0	0	0	0	16	9	25	
7:45	0	0	1	0	1	0	28	20	48	
8:00	0	1	8	2	8	3	35	29	64	
8:15	0	2	7	4	7	6				
8:30	0	2	12	9	12	11				
8:45	0	1	8	8	8	9				
9:00	0	2	3	7	3	9				
9:15	0	2	13	4	13	6				
9:30	0	3	9	9	9	12				
9:45	0	5	11	8	11	13				
10:00	0	6	11	5	11	11				
10:15	0	1	5	7	5	8				
10:30	0	4	17	8	17	12				
10:45	0	1	12	14	12	15				
11:00	1	3	6	5	7	8				
11:15	0	1	10	8	10	9				
11:30	0	4	9	2	9	6				
11:45	2	2	9	10	11	12				
12:00	0	1	9	11	9	12				
12:15	2	2	28	17	30	19				
12:30	2	6	10	9	12	15				
12:45	0	3	22	8	22	11				
13:00	0	3	17	22	17	25				
13:15	0	5	14	11	14	16				
13:30	0	6	15	12	15	18				
13:45	0	0	14	14	14	14				
14:00	0	3	11	4	11	7				
14:15	1	3	18	14	19	17				
14:30	0	5	18	13	18	18				
14:45	0	2	13	15	13	17				
15:00	0	1	9	9	9	10				
15:15	0	1	14	10	14	11				
15:30	0	1	7	9	7	10				
15:45	0	2	8	8	8	10	In	Out	Total	
16:00	1	3	11	7	12	10	48	51	99	
16:15	0	2	15	9	15	11	45	44	89	
16:30	0	2	13	10	13	12	33	41	74	
16:45	0	5	8	13	8	18	27	35	62	
17:00	0	1	9	2	9	3	21	20	41	
17:15	0	1	3	7	3	8				
17:30	0	0	7	6	7	6				
17:45	0	2	2	1	2	3				
18:00	0	4	0	1	0	5				
18:15	0	1	0	0	0	1				
18:30	1	1	0	0	1	1				
18:45	0	0	0	0	0	0				
19:00	0	0	0	0	0	0				
19:15	0	0	0	0	0	0				
19:30	0	0	0	0	0	0				
19:45	0	0	0	0	0	0				
20:00	0	0	0	0	0	0				
20:15	0	0	0	0	0	0				
20:30	0	0	0	0	0	0				
20:45	0	0	0	0	0	0				
21:00	0	0	0	0	0	0				
21:15	0	0	0	0	0	0				
21:30	0	0	0	0	0	0				
21:45	0	0	0	0	0	0				
22:00	0	0	0	0	0	0				
22:15	0	0	0	0	0	0				
22:30	0	0	0	0	0	0				
22:45	0	0	0	0	0	0				
23:00	0	0	0	0	0	0				
23:15	0	0	0	0	0	0				
23:30	0	0	0	0	0	0				
23:45	0	0	0	0	0	0				
	13	107	450	356	463	463				
					Daily	926				

Peak Hour						
Morning			Evening			
In	Out	Total	In	Out	Total	Daily
35	29	64	48	51	99	926

Appendix A - Similar Car Wash Facility Traffic Survey

Prepared by NDS/ATD

VOLUME

Project Dwy e/o N Cactus Ave

Day: Thursday
Date: 1/16/2014

City: Rialto
Project #: 14-6015-001

DAILY TOTALS	NB	SB	EB	WB	Total
	174	472	0	0	646

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	0		0						0	
04:15	0		0						0	
04:30	0		0						0	
04:45	0		0						0	
05:00	0		0						0	
05:15	0		0						0	
05:30	0		0						0	
05:45	0		0						0	
06:00	0		0						0	
06:15	0		0						0	
06:30	0		0						0	
06:45	0		0						0	
07:00	0		0						0	
07:15	0		5						5	
07:30	0		1						1	
07:45	3	3	7	13					10	16
08:00	0		9						9	
08:15	3		8						11	
08:30	3		5						8	
08:45	3	9	7	29					10	38
09:00	1		6						7	
09:15	1		6						7	
09:30	3		9						12	
09:45	4	9	9	30					13	39
10:00	4		8						12	
10:15	4		11						15	
10:30	5		9						14	
10:45	3	16	12	40					15	56
11:00	8		13						21	
11:15	7		14						21	
11:30	5		8						13	
11:45	7	27	13	48					20	75
TOTALS		64		160						**224**
SPLIT %		28.6%		71.4%						**34.7%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00	6		16						22	
12:15	7		13						20	
12:30	4		15						19	
12:45	7	24	12	56					19	80
13:00	2		8						10	
13:15	1		12						13	
13:30	3		9						12	
13:45	3	9	8	37					11	46
14:00	6		12						18	
14:15	4		10						14	
14:30	4		10						14	
14:45	7	21	11	43					18	64
15:00	4		12						16	
15:15	5		9						14	
15:30	6		12						18	
15:45	5	20	8	41					13	61
16:00	3		18						21	
16:15	3		13						16	
16:30	6		23						29	
16:45	2	14	13	67					15	81
17:00	0		14						14	
17:15	6		11						17	
17:30	2		7						9	
17:45	4	12	12	44					16	56
18:00	5		6						11	
18:15	1		9						10	
18:30	4		6						10	
18:45	0	10	3	24					3	34
19:00	0		0						0	
19:15	0		0						0	
19:30	0		0						0	
19:45	0		0						0	
20:00	0		0						0	
20:15	0		0						0	
20:30	0		0						0	
20:45	0		0						0	
21:00	0		0						0	
21:15	0		0						0	
21:30	0		0						0	
21:45	0		0						0	
22:00	0		0						0	
22:15	0		0						0	
22:30	0		0						0	
22:45	0		0						0	
23:00	0		0						0	
23:15	0		0						0	
23:30	0		0						0	
23:45	0		0						0	
TOTALS		110		312						**422**
SPLIT %		26.1%		73.9%						**65.3%**

DAILY TOTALS	CARS IN	CARS OUT			Total
	174	472			646

AM Peak Hour	11:00	11:45			**11:45**
AM Pk Volume	27	57			**81**
Pk Hr Factor	0.844	0.891			**0.920**
7 - 9 Volume	12	42	0	0	**54**
7 - 9 Peak Hour	07:45	07:45			**07:45**
7 - 9 Pk Volume	9	29	0	0	**38**
Pk Hr Factor	0.750	0.806	0.000	0.000	**0.864**

PM Peak Hour	12:00	16:00			**16:00**
PM Pk Volume	24	67			**81**
Pk Hr Factor	0.857	0.728			**0.698**
4 - 6 Volume	26	111	0	0	**137**
4 - 6 Peak Hour	16:00	16:00			**16:00**
4 - 6 Pk Volume	14	67	0	0	**81**
Pk Hr Factor	0.583	0.728	0.000	0.000	**0.698**

Peak Hour						
Morning			Morning			
Inbound	Outbound	Total	Inbound	Outbound	Total	Daily
29	29	58	67	67	134	944

Appendix B

Seasonal Factor Calculations

Table B
Caltrans PEM I-710 Mainline Count Comparisons

Freeway Segment	Travel Direction	Peak Hour	2/4/2020 Tue	2/5/2020 Wed	2/6/2020 Thu	February 2020 Average		
Mainline VDS 718147 - FLORENCE 2	I-710 N	AM	6230 7:55:00 AM	6421 7:55:00 AM	6547 7:55:00 AM	6399	12,711	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		6269 7:55:00 AM	6360 8:10:00 AM	6308 7:55:00 AM	6312		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	AM	6323 8:05:00 AM	6551 8:00:00 AM	6585 8:00:00 AM	6486	14,310	13,100
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		7807 8:00:00 AM	7831 8:10:00 AM	7834 7:55:00 AM	7824		
Mainline VDS 776266 - FLORENCE 1	I-710 N	AM	5809 7:55:00 AM	5907 7:55:00 AM	5968 7:55:00 AM	5895	12,280	
Mainline VDS 776295 - FLORENCE 1	I-710 S		6397 7:55:00 AM	6468 8:00:00 AM	6291 7:55:00 AM	6385		
Mainline VDS 718147 - FLORENCE 2	I-710 N	PM	5985 5:50:00 PM	5853 5:25:00 PM	5935 5:50:00 PM	5924	12,328	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		6491 4:55:00 PM	6294 4:55:00 PM	6427 4:55:00 PM	6404		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	PM	8160 5:15:00 PM	8245 5:55:00 PM	8292 5:50:00 PM	8232	16,084	13,488
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		7948 5:15:00 PM	7864 4:55:00 PM	7744 4:55:00 PM	7852		
Mainline VDS 776266 - FLORENCE 1	I-710 N	PM	5378 5:25:00 PM	5392 5:25:00 PM	5338 5:30:00 PM	5369	12,053	
Mainline VDS 776295 - FLORENCE 1	I-710 S		6840 4:55:00 PM	6525 5:00:00 PM	6687 4:55:00 PM	6684		

Freeway Segment	Travel Direction	Peak Hour	8/11/2020 Tue	8/12/2020 Wed	8/13/2020 Thu	August 2020 Average		
Mainline VDS 718147 - FLORENCE 2	I-710 N	AM	6303 8:10:00 AM	6227 8:00:00 AM	6153 8:05:00 AM	6228	11,581	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		5436 8:10:00 AM	5436 8:05:00 AM	5186 7:55:00 AM	5353		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	AM	7321 8:10:00 AM	7588 8:05:00 AM	7215 8:05:00 AM	7375	13,959	12,117
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		6675 8:10:00 AM	6759 8:00:00 AM	6319 7:55:00 AM	6584		
Mainline VDS 776266 - FLORENCE 1	I-710 N	AM	5658 8:10:00 AM	5681 8:00:00 AM	5647 8:05:00 AM	5662	10,811	
Mainline VDS 776295 - FLORENCE 1	I-710 S		5138 8:15:00 AM	5427 8:00:00 AM	4881 8:50:00 AM	5149		
Mainline VDS 718147 - FLORENCE 2	I-710 N	PM	5721 5:15:00 PM	5886 5:05:00 PM	5606 5:15:00 PM	5738	11,976	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		6167 6:00:00 PM	6299 5:30:00 PM	6248 5:15:00 PM	6238		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	PM	8343 5:35:00 PM	8468 5:55:00 PM	8361 5:00:00 PM	8391	16,052	13,261
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		7484 6:00:00 PM	7826 5:30:00 PM	7674 5:20:00 PM	7661		
Mainline VDS 776266 - FLORENCE 1	I-710 N	PM	5107 5:20:00 PM	5207 5:05:00 PM	4984 5:15:00 PM	5099	11,754	
Mainline VDS 776295 - FLORENCE 1	I-710 S		6475 6:00:00 PM	6736 5:45:00 PM	6753 5:25:00 PM	6655		

Roadway Segment		Peak Hour	August to February Seasonal Factor		
I-710 Freeway	Mainline VDS 718147 - FLORENCE 2	AM	1.027	1.098	1.086
	Mainline VDS 717986 - FIRESTONE 1		1.179		
	Mainline VDS 774359 - NORTH OF MILLER WAY		0.879	1.025	
	Mainline VDS 774358 - NORTH OF MILLER WAY		1.188		
	Mainline VDS 776266 - FLORENCE 1		1.041	1.136	
	Mainline VDS 776295 - FLORENCE 1		1.240		
	Mainline VDS 718147 - FLORENCE 2	PM	1.032	1.029	1.019
	Mainline VDS 717986 - FIRESTONE 1		1.027		
	Mainline VDS 774359 - NORTH OF MILLER WAY		0.981	1.002	
	Mainline VDS 774358 - NORTH OF MILLER WAY		1.025		
	Mainline VDS 776266 - FLORENCE 1		1.053	1.025	
	Mainline VDS 776295 - FLORENCE 1		1.004		

Appendix C

Similar Car Wash Facility Parking and Queueing Survey Data

Table 4

Summary of Tuesday Queuing Length and Parking Demand Observation (July 10, 2018)

Time Period	Rapids Express		Scrub Bot Express		Speedie Clean Express		Hourly Peak		Hourly Average		Hourly 85th Percentile	
	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking	Queue	Parking
7:00 AM - 7:15 AM	2	3	0	1	1	2	2	3	1.0	2.0	1.7	2.7
7:15 AM - 7:30 AM	3	3	2	1	2	8	3	8	2.3	4.0	2.7	6.5
7:30 AM - 7:45 AM	0	5	1	3	4	5	4	5	1.7	4.3	3.1	5.0
7:45 AM - 8:00 AM	0	3	2	3	2	5	2	5	1.3	3.7	2.0	4.4
8:00 AM - 8:15 AM	1	4	1	7	2	3	2	7	1.3	4.7	1.7	6.1
8:15 AM - 8:30 AM	0	9	0	5	3	7	3	9	1.0	7.0	2.1	8.4
8:30 AM - 8:45 AM	1	5	0	6	4	11	4	11	1.7	7.3	3.1	9.5
8:45 AM - 9:00 AM	1	13	0	2	5	11	5	13	2.0	8.7	3.8	12.4
9:00 AM - 9:15 AM	3	12	1	4	8	10	8	12	4.0	8.7	6.5	11.4
9:15 AM - 9:30 AM	2	20	0	6	4	17	4	20 *	2.0	14.3 *	3.4	19.1 *
9:30 AM - 9:45 AM	0	11	1	3	4	11	4	11	1.7	8.3	3.1	11.0
9:45 AM - 10:00 AM	1	15	1	5	3	9	3	15	1.7	9.7	2.4	13.2
10:00 AM - 10:15 AM	0	19	0	4	4	11	4	19	1.3	11.3	2.8	16.6
10:15 AM - 10:30 AM	0	14	0	1	7	13	7	14	2.3	9.3	4.9	13.7
10:30 AM - 10:45 AM	1	15	1	5	5	14	5	15	2.3	11.3	3.8	14.7
10:45 AM - 11:00 AM	1	12	1	9	9	8	9	12	3.7	9.7	6.6	11.1
11:00 AM - 11:15 AM	1	11	0	9	5	9	5	11	2.0	9.7	3.8	10.4
11:15 AM - 11:30 AM	2	12	2	8	7	7	7	12	3.7	9.0	5.5	10.8
11:30 AM - 11:45 AM	0	14	1	4	5	13	5	14	2.0	10.3	3.8	13.7
11:45 AM - 12:00 PM	1	14	2	5	6	12	6	14	3.0	10.3	4.8	13.4
12:00 PM - 12:15 PM	1	11	1	7	8	14	8	14	3.3	10.7	5.9	13.1
12:15 PM - 12:30 PM	0	12	3	8	4	13	4	13	2.3	11.0	3.7	12.7
12:30 PM - 12:45 PM	2	10	0	8	4	13	4	13	2.0	10.3	3.4	12.1
12:45 PM - 1:00 PM	0	11	1	8	7	8	7	11	2.7	9.0	5.2	10.1
1:00 PM - 1:15 PM	2	10	3	9	4	8	4	10	3.0	9.0	3.7	9.7
1:15 PM - 1:30 PM	1	12	0	9	5	11	5	12	2.0	10.7	3.8	11.7
1:30 PM - 1:45 PM	5	14	1	8	1	15	5	15	2.3	12.3	3.8	14.7
1:45 PM - 2:00 PM	4	14	0	7	6	12	6	14	3.3	11.0	5.4	13.4
2:00 PM - 2:15 PM	6	17	1	7	1	13	6	17	2.7	12.3	4.5	15.8
2:15 PM - 2:30 PM	3	15	1	8	4	12	4	15	2.7	11.7	3.7	14.1
2:30 PM - 2:45 PM	5	16	0	10	1	17	5	17	2.0	14.3 *	3.8	16.7
2:45 PM - 3:00 PM	7	12	0	11	1	14	7	14	2.7	12.3	5.2	13.4
3:00 PM - 3:15 PM	3	16	0	9	2	6	3	16	1.7	10.3	2.7	13.9
3:15 PM - 3:30 PM	4	15	1	8	3	14	4	15	2.7	12.3	3.7	14.7
3:30 PM - 3:45 PM	2	19	1	7	1	17	2	19	1.3	14.3 *	1.7	18.4
3:45 PM - 4:00 PM	2	15	0	7	5	13	5	15	2.3	11.7	4.1	14.4
4:00 PM - 4:15 PM	3	15	0	1	7	7	7	15	3.3	7.7	5.8	12.6
4:15 PM - 4:30 PM	6	12	2	4	4	13	6	13	4.0	9.7	5.4	12.7
4:30 PM - 4:45 PM	5	13	1	4	1	11	5	13	2.3	9.3	3.8	12.4
4:45 PM - 5:00 PM	4	14	0	5	3	13	4	14	2.3	10.7	3.7	13.7
5:00 PM - 5:15 PM	6	9	0	3	3	10	6	10	3.0	7.3	5.1	9.7
5:15 PM - 5:30 PM	3	16	2	4	2	8	3	16	2.3	9.3	2.7	13.6
5:30 PM - 5:45 PM	6	14	0	7	4	8	6	14	3.3	9.7	5.4	12.2
5:45 PM - 6:00 PM	3	15	3	7	1	8	3	15	2.3	10.0	3.0	12.9
6:00 PM - 6:15 PM	5	17	0	13	2	13	5	17	2.3	14.3 *	4.1	15.8
6:15 PM - 6:30 PM	4	9	0	9	0	12	4	12	1.3	10.0	2.8	11.1
6:30 PM - 6:45 PM	5	11	1	9	5	9	5	11	3.7	9.7	5.0	10.4
6:45 PM - 7:00 PM	3	14	1	11	2	13	3	14	2.0	12.7	2.7	13.7
7:00 PM - 7:15 PM	1	17	0	11	0	8	1	17	0.3	12.0	0.7	15.2
7:15 PM - 7:30 PM	4	12	0	12	1	9	4	12	1.7	11.0	3.1	12.0
7:30 PM - 7:45 PM	1	14	0	12	1	12	1	14	0.7	12.7	1.0	13.4
7:45 PM - 8:00 PM	18	4	1	11	2	9	18 *	11	7.0 *	8.0	13.2 *	10.4
Site Peak	18	20	3	13	9	17						
Site Average	2.8	12.3	0.8	6.6	3.6	10.6						
Site 85th Percentile	5.0	16.0	2.0	9.4	6.0	13.4						

APPENDIX C

VOLUME COUNT WORKSHEETS

INTERSECTION TURNING MOVEMENT COUNTS

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

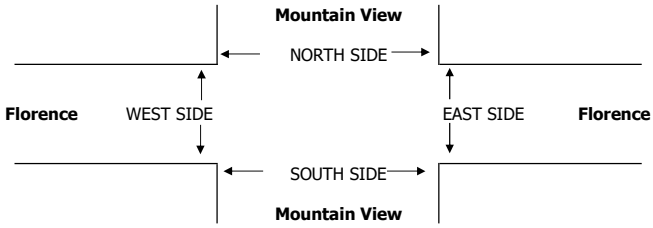
DATE:	LOCATION:	Huntington	PROJECT #:	SC
Tue, Jan 19, 21	NORTH & SOUTH:	Mountain View	LOCATION #:	1
	EAST & WEST:	Florence	CONTROL:	SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Mountain View			SOUTHBOUND Mountain View			EASTBOUND Florence			WESTBOUND Florence				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 1	ST 1	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	22	15	18	7	6	4	8	92	10	12	134	3	331	0	0	1	0	1
	7:15 AM	33	19	18	4	7	5	6	120	8	6	121	2	349	0	0	0	0	0
	7:30 AM	30	21	17	4	8	9	5	94	6	9	159	4	366	0	0	0	0	0
	7:45 AM	38	18	12	5	11	8	7	114	9	11	162	2	397	0	0	0	0	0
	8:00 AM	18	32	17	8	11	5	7	96	16	8	150	2	370	0	0	1	0	1
	8:15 AM	22	17	25	6	15	6	4	103	11	9	145	5	368	0	0	0	0	0
	8:30 AM	18	22	19	4	15	5	10	107	9	11	161	3	384	0	0	0	0	0
	8:45 AM	17	19	20	8	14	6	4	104	12	7	143	2	356	0	0	0	0	0
	VOLUMES	198	163	146	46	87	48	51	830	81	73	1,175	23	2,921	0	0	2	0	2
	APPROACH %	39%	32%	29%	25%	48%	27%	5%	86%	8%	6%	92%	2%						
	APP/DEPART	507	/	235	181	/	241	962	/	1,022	1,271	/	1,423	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	96	89	73	23	52	24	28	420	45	39	618	12	1,519					
	APPROACH %	37%	34%	28%	23%	53%	24%	6%	85%	9%	6%	92%	2%						
	PEAK HR FACTOR		0.949			0.917			0.948			0.956		0.957					
	APP/DEPART	258	/	128	99	/	136	493	/	516	669	/	739	0					
PM	4:00 PM	10	28	26	9	33	7	17	264	41	19	238	7	699	0	0	0	0	0
	4:15 PM	14	25	20	15	29	13	20	203	45	27	206	8	625	0	0	0	0	0
	4:30 PM	16	31	20	12	32	8	16	251	44	21	253	9	713	0	0	0	0	0
	4:45 PM	14	21	21	15	39	9	10	206	42	15	194	6	592	0	0	0	0	0
	5:00 PM	23	32	18	7	35	10	18	250	63	14	235	6	711	0	0	0	0	0
	5:15 PM	18	36	19	14	39	16	13	205	42	25	212	8	647	0	0	0	0	0
	5:30 PM	20	31	25	11	30	10	7	208	52	16	238	5	653	0	0	0	0	0
	5:45 PM	15	33	22	11	31	8	17	225	47	25	187	4	625	0	0	0	0	0
	VOLUMES	130	237	171	94	268	81	118	1,812	376	162	1,763	53	5,265	0	0	0	0	0
	APPROACH %	24%	44%	32%	21%	60%	18%	5%	79%	16%	8%	89%	3%						
	APP/DEPART	538	/	408	443	/	806	2,306	/	2,077	1,978	/	1,974	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	71	120	78	48	145	43	57	912	191	75	894	29	2,663					
	APPROACH %	26%	45%	29%	20%	61%	18%	5%	79%	16%	8%	90%	3%						
	PEAK HR FACTOR		0.921			0.855			0.876			0.882		0.934					
	APP/DEPART	269	/	206	236	/	411	1,160	/	1,038	998	/	1,008	0					



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

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Tue, Jan 19, 21

LOCATION: Huntington
NORTH & SOUTH: Mission
EAST & WEST: Florence

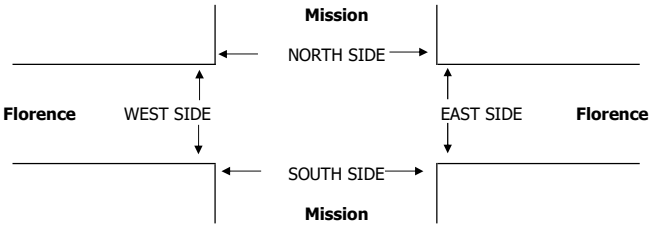
PROJECT #: SC
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND Mission			SOUTHBOUND Mission			EASTBOUND Florence			WESTBOUND Florence				U-TURNS				
	LANES:	NL 0	NT 1	NR 0	SL 0.5	ST 0.5	SR 1	EL 1	ET 2	ER 0	WL 0	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	0	0	0	0	12	7	114	0	0	119	1	253	0	0	0	0	0
	7:15 AM	0	0	0	0	0	13	10	130	0	0	127	0	280	0	0	1	0	1
	7:30 AM	0	0	0	3	0	20	5	129	0	0	146	1	304	0	0	0	0	0
	7:45 AM	1	0	0	2	0	16	9	107	0	0	175	0	310	0	0	0	0	0
	8:00 AM	0	0	0	2	0	15	6	133	0	0	147	1	304	0	0	0	0	0
	8:15 AM	0	0	0	1	1	10	10	117	0	0	153	0	292	0	0	0	0	0
	8:30 AM	1	0	0	5	0	11	8	139	1	1	163	1	330	0	0	0	0	0
	8:45 AM	0	0	0	3	1	13	11	124	2	0	174	0	328	0	0	0	0	0
	VOLUMES	2	0	0	16	2	110	66	993	3	1	1,204	4	2,401	0	0	1	0	1
	APPROACH %	100%	0%	0%	13%	2%	86%	6%	94%	0%	0%	100%	0%						
	APP/DEPART	2	/	69	128	/	6	1,062	/	1,009	1,209	/	1,317	0					
	BEGIN PEAK HR		8:00 AM																
	VOLUMES	1	0	0	11	2	49	35	513	3	1	637	2	1,254					
	APPROACH %	100%	0%	0%	18%	3%	79%	6%	93%	1%	0%	100%	0%						
	PEAK HR FACTOR		0.250			0.912			0.931			0.920		0.950					
	APP/DEPART	1	/	37	62	/	6	551	/	524	640	/	687	0					
PM	4:00 PM	3	1	0	9	0	40	14	247	0	0	216	7	537	0	0	0	0	0
	4:15 PM	0	0	0	8	0	34	15	246	0	0	226	6	535	0	0	0	0	0
	4:30 PM	0	0	1	8	0	41	11	252	0	1	228	2	544	0	0	0	0	0
	4:45 PM	0	0	1	3	0	34	16	244	0	0	207	2	507	0	0	0	0	0
	5:00 PM	1	0	0	9	0	34	14	231	0	0	217	3	509	0	0	0	0	0
	5:15 PM	0	0	1	3	0	30	12	243	2	1	227	6	525	0	0	0	1	1
	5:30 PM	0	0	0	7	0	35	17	218	0	0	224	5	506	0	0	0	0	0
	5:45 PM	0	1	0	9	0	39	19	240	0	1	191	5	505	0	0	0	1	1
	VOLUMES	4	2	3	56	0	287	118	1,921	2	3	1,736	36	4,168	0	0	0	2	2
	APPROACH %	44%	22%	33%	16%	0%	84%	6%	94%	0%	0%	98%	2%						
	APP/DEPART	9	/	156	343	/	3	2,041	/	1,982	1,775	/	2,027	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	3	1	2	28	0	149	56	989	0	1	877	17	2,123					
	APPROACH %	50%	17%	33%	16%	0%	84%	5%	95%	0%	0%	98%	2%						
	PEAK HR FACTOR		0.375			0.903			0.993			0.964		0.976					
	APP/DEPART	6	/	74	177	/	1	1,045	/	1,019	895	/	1,029	0					



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

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Tue, Jan 19, 21

LOCATION: Huntington
NORTH & SOUTH: State
EAST & WEST: Florence

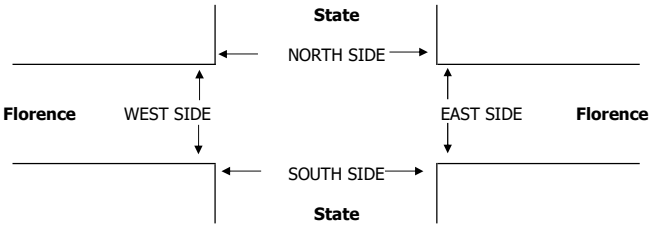
PROJECT #: SC
LOCATION #: 3
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND State			SOUTHBOUND State			EASTBOUND Florence			WESTBOUND Florence				U-TURNS				
	LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	13	75	33	28	34	2	3	92	13	8	103	28	432	0	0	0	0	0
	7:15 AM	11	86	27	26	40	1	3	121	14	10	121	31	491	0	0	0	1	1
	7:30 AM	13	121	30	15	44	0	5	103	13	12	124	36	516	0	0	0	0	0
	7:45 AM	15	108	24	19	43	0	3	105	14	19	162	35	547	0	0	0	0	0
	8:00 AM	14	108	25	20	33	4	6	102	22	22	126	21	503	0	0	0	0	0
	8:15 AM	8	99	23	18	29	0	5	106	17	17	158	33	513	0	0	0	0	0
	8:30 AM	23	83	25	26	41	2	2	118	15	25	144	25	529	0	0	0	0	0
	8:45 AM	17	75	22	18	42	1	7	107	21	20	157	22	509	0	0	0	0	0
	VOLUMES	114	755	209	170	306	10	34	854	129	133	1,095	231	4,040	0	0	0	1	1
	APPROACH %	11%	70%	19%	35%	63%	2%	3%	84%	13%	9%	75%	16%						
	APP/DEPART	1,078	/	1,020	486	/	567	1,017	/	1,234	1,459	/	1,219	0					
	BEGIN PEAK HR		7:45 AM																
	VOLUMES	60	398	97	83	146	6	16	431	68	83	590	114	2,092					
	APPROACH %	11%	72%	17%	35%	62%	3%	3%	84%	13%	11%	75%	14%						
	PEAK HR FACTOR		0.944			0.851			0.954			0.911		0.956					
	APP/DEPART	555	/	528	235	/	297	515	/	611	787	/	656	0					
PM	4:00 PM	26	88	32	35	152	1	14	209	33	39	190	25	844	0	0	0	0	0
	4:15 PM	22	71	31	38	140	5	8	211	37	40	213	28	844	0	0	0	0	0
	4:30 PM	25	78	37	47	152	7	13	194	44	31	190	32	850	0	0	0	0	0
	4:45 PM	23	58	33	46	137	3	8	199	48	32	189	29	805	0	0	0	0	0
	5:00 PM	20	65	37	47	157	4	9	207	22	28	189	21	806	0	0	0	0	0
	5:15 PM	18	73	33	46	144	2	5	214	30	30	219	25	839	0	0	0	0	0
	5:30 PM	27	53	27	39	173	0	9	176	41	36	194	22	797	0	0	0	0	0
	5:45 PM	24	52	24	45	154	1	11	187	42	28	180	24	772	0	0	0	0	0
	VOLUMES	185	538	254	343	1,209	23	77	1,597	297	264	1,564	206	6,557	0	0	0	0	0
	APPROACH %	19%	55%	26%	22%	77%	1%	4%	81%	15%	13%	77%	10%						
	APP/DEPART	977	/	821	1,575	/	1,770	1,971	/	2,194	2,034	/	1,772	0					
	BEGIN PEAK HR		4:00 PM																
	VOLUMES	96	295	133	166	581	16	43	813	162	142	782	114	3,343					
	APPROACH %	18%	56%	25%	22%	76%	2%	4%	80%	16%	14%	75%	11%						
	PEAK HR FACTOR		0.897			0.926			0.994			0.923		0.983					
	APP/DEPART	524	/	452	763	/	885	1,018	/	1,112	1,038	/	894	0					



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

APPENDIX D

EXISTING VOLUME ADJUSTMENT FACTOR CALCULATIONS

Table B
Caltrans PEM I-710 Mainline Count Comparisons

Freeway Segment	Travel Direction	Peak Hour	2/4/2020 Tue	2/5/2020 Wed	2/6/2020 Thu	February 2020 Average		
Mainline VDS 718147 - FLORENCE 2	I-710 N	AM	6230 7:55:00 AM	6421 7:55:00 AM	6547 7:55:00 AM	6399	12,711	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		6269 7:55:00 AM	6360 8:10:00 AM	6308 7:55:00 AM	6312		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	AM	6323 8:05:00 AM	6551 8:00:00 AM	6585 8:00:00 AM	6486	14,310	13,100
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		7807 8:00:00 AM	7831 8:10:00 AM	7834 7:55:00 AM	7824		
Mainline VDS 776266 - FLORENCE 1	I-710 N	AM	5809 7:55:00 AM	5907 7:55:00 AM	5968 7:55:00 AM	5895	12,280	
Mainline VDS 776295 - FLORENCE 1	I-710 S		6397 7:55:00 AM	6468 8:00:00 AM	6291 7:55:00 AM	6385		
Mainline VDS 718147 - FLORENCE 2	I-710 N	PM	5985 5:50:00 PM	5853 5:25:00 PM	5935 5:50:00 PM	5924	12,328	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		6491 4:55:00 PM	6294 4:55:00 PM	6427 4:55:00 PM	6404		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	PM	8160 5:15:00 PM	8245 5:55:00 PM	8292 5:50:00 PM	8232	16,084	13,488
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		7948 5:15:00 PM	7864 4:55:00 PM	7744 4:55:00 PM	7852		
Mainline VDS 776266 - FLORENCE 1	I-710 N	PM	5378 5:25:00 PM	5392 5:25:00 PM	5338 5:30:00 PM	5369	12,053	
Mainline VDS 776295 - FLORENCE 1	I-710 S		6840 4:55:00 PM	6525 5:00:00 PM	6687 4:55:00 PM	6684		

Freeway Segment	Travel Direction	Peak Hour	8/11/2020 Tue	8/12/2020 Wed	8/13/2020 Thu	August 2020 Average		
Mainline VDS 718147 - FLORENCE 2	I-710 N	AM	6303 8:10:00 AM	6227 8:00:00 AM	6153 8:05:00 AM	6228	11,581	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		5436 8:10:00 AM	5436 8:05:00 AM	5186 7:55:00 AM	5353		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	AM	7321 8:10:00 AM	7588 8:05:00 AM	7215 8:05:00 AM	7375	13,959	12,117
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		6675 8:10:00 AM	6759 8:00:00 AM	6319 7:55:00 AM	6584		
Mainline VDS 776266 - FLORENCE 1	I-710 N	AM	5658 8:10:00 AM	5681 8:00:00 AM	5647 8:05:00 AM	5662	10,811	
Mainline VDS 776295 - FLORENCE 1	I-710 S		5138 8:15:00 AM	5427 8:00:00 AM	4881 8:50:00 AM	5149		
Mainline VDS 718147 - FLORENCE 2	I-710 N	PM	5721 5:15:00 PM	5886 5:05:00 PM	5606 5:15:00 PM	5738	11,976	
Mainline VDS 717986 - FIRESTONE 1	I-710 S		6167 6:00:00 PM	6299 5:30:00 PM	6248 5:15:00 PM	6238		
Mainline VDS 774359 - NORTH OF MILLER WAY	I-710 N	PM	8343 5:35:00 PM	8468 5:55:00 PM	8361 5:00:00 PM	8391	16,052	13,261
Mainline VDS 774358 - NORTH OF MILLER WAY	I-710 S		7484 6:00:00 PM	7826 5:30:00 PM	7674 5:20:00 PM	7661		
Mainline VDS 776266 - FLORENCE 1	I-710 N	PM	5107 5:20:00 PM	5207 5:05:00 PM	4984 5:15:00 PM	5099	11,754	
Mainline VDS 776295 - FLORENCE 1	I-710 S		6475 6:00:00 PM	6736 5:45:00 PM	6753 5:25:00 PM	6655		

Roadway Segment		Peak Hour	August to February Seasonal Factor		
I-710 Freeway	Mainline VDS 718147 - FLORENCE 2	AM	1.027	1.098	1.086
	Mainline VDS 717986 - FIRESTONE 1		1.179		
	Mainline VDS 774359 - NORTH OF MILLER WAY		0.879	1.025	
	Mainline VDS 774358 - NORTH OF MILLER WAY		1.188		
	Mainline VDS 776266 - FLORENCE 1		1.041	1.136	
	Mainline VDS 776295 - FLORENCE 1		1.240		
	Mainline VDS 718147 - FLORENCE 2	PM	1.032	1.029	1.019
	Mainline VDS 717986 - FIRESTONE 1		1.027		
	Mainline VDS 774359 - NORTH OF MILLER WAY		0.981	1.002	
	Mainline VDS 774358 - NORTH OF MILLER WAY		1.025		
	Mainline VDS 776266 - FLORENCE 1		1.053	1.025	
	Mainline VDS 776295 - FLORENCE 1		1.004		

APPENDIX E

LEVEL OF SERVICE WORKSHEETS

Existing

Intersection Level Of Service Report
Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	89	73	23	52	24	28	420	45	39	618	12
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	101	83	26	59	27	32	477	51	44	702	14
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	26	22	7	15	7	8	125	13	11	183	4
Total Analysis Volume [veh/h]	114	106	87	27	62	28	33	498	53	46	734	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.02	0.06	0.06	0.02	0.16	0.03	0.03	0.23	0.23
Intersection LOS	A											
Intersection V/C	0.547											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.386

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	0	0	11	2	49	35	513	3	1	637	2
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	0	12	2	56	40	583	3	1	724	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	1	15	11	153	1	0	191	1
Total Analysis Volume [veh/h]	1	0	0	13	2	59	42	614	3	1	762	2
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.01	0.04	0.03	0.19	0.19	0.00	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.386											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	60	398	97	83	146	6	16	431	68	83	590	114
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	452	110	94	166	7	18	490	77	94	670	130
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	118	29	25	43	2	5	128	20	25	175	34
Total Analysis Volume [veh/h]	71	473	115	98	174	7	19	513	81	98	701	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.18	0.18	0.06	0.06	0.06	0.01	0.19	0.19	0.06	0.26	0.26
Intersection LOS	B											
Intersection V/C	0.602											

Intersection Level Of Service Report
Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	71	120	78	48	145	43	57	912	191	75	894	29
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	123	80	49	149	44	59	938	197	77	920	30
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	32	20	13	38	11	15	240	50	20	236	8
Total Analysis Volume [veh/h]	75	126	82	50	153	45	60	961	202	79	943	31
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.18	0.18	0.03	0.12	0.12	0.04	0.30	0.13	0.05	0.30	0.30
Intersection LOS	B											
Intersection V/C	0.641											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	3	1	2	28	0	149	56	989	0	1	877	17
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	2	29	0	153	58	1018	0	1	902	17
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	8	0	40	15	268	0	0	237	4
Total Analysis Volume [veh/h]	3	1	2	31	0	161	61	1072	0	1	949	18
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.10	0.04	0.34	0.00	0.00	0.30	0.30
Intersection LOS	A											
Intersection V/C	0.447											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.754

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	295	133	166	581	16	43	813	162	142	782	114
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	304	137	171	598	16	44	837	167	146	805	117
Peak Hour Factor	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	77	35	43	152	4	11	213	42	37	205	30
Total Analysis Volume [veh/h]	101	309	139	174	608	16	45	851	170	149	819	119
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.14	0.14	0.11	0.20	0.20	0.03	0.32	0.32	0.09	0.29	0.29
Intersection LOS	C											
Intersection V/C	0.754											

Existing Plus Project

3100 Florence Avenue Car Wash

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Scenario 2 Existing Plus Project
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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Mountain View Ave (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Right	0.550	-	A
2	Mission Pl (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Thru	0.390	-	A
3	State St (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Thru	0.605	-	B
4	Project East Dwy (NS) at Florence Ave (EW)	Two-way stop	HCM 6th Edition	NB Right	0.010	10.4	B

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

Intersection Level Of Service Report

Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	89	73	23	52	24	28	420	45	39	618	12
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	1	0	0	0	2	0	1	3	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	109	101	85	27	59	27	32	479	51	45	705	16
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	26	22	7	15	7	8	125	13	12	184	4
Total Analysis Volume [veh/h]	114	106	89	28	62	28	33	501	53	47	737	17
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.19	0.19	0.02	0.06	0.06	0.02	0.16	0.03	0.03	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.550											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.390

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	0	0	11	2	49	35	513	3	1	637	2
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	1	8	0	1	0	0	0	5	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	1	8	12	3	56	40	583	8	7	724	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	3	1	15	11	153	2	2	191	1
Total Analysis Volume [veh/h]	7	1	8	13	3	59	42	614	8	7	762	2
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.01	0.01	0.04	0.03	0.19	0.19	0.00	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.390											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.605

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	60	398	97	83	146	6	16	431	68	83	590	114
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	2	3	8	4	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	452	110	94	166	9	21	498	81	94	673	130
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	118	29	25	43	2	5	130	21	25	176	34
Total Analysis Volume [veh/h]	72	473	115	98	174	9	22	521	85	98	704	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.18	0.18	0.06	0.06	0.06	0.01	0.19	0.19	0.06	0.26	0.26
Intersection LOS	B											
Intersection V/C	0.605											

Intersection Level Of Service Report
Intersection 4: Project East Dwy (NS) at Florence Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	524	0	0	656
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	8	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	7	603	0	0	751
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	159	0	0	198
Total Analysis Volume [veh/h]	0	7	635	0	0	791
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	10.36	0.00	0.00	0.00	0.00
Movement LOS		B	A			A
95th-Percentile Queue Length [veh/ln]	0.00	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.78	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.36		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.05					
Intersection LOS	B					

3100 Florence Avenue Car Wash

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Scenario 2 Existing Plus Project
9/7/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Mountain View Ave (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Thru	0.654	-	B
2	Mission Pl (NS) at Florence Ave (EW)	Signalized	ICU 1	EB Thru	0.557	-	A
3	State St (NS) at Florence Ave (EW)	Signalized	ICU 1	EB Thru	0.766	-	C
4	Project East Dwy (NS) at Florence Ave (EW)	Two-way stop	HCM 6th Edition	NB Right	0.032	12.8	B

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

Intersection Level Of Service Report

Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.654

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	71	120	78	48	145	43	57	912	191	75	894	29
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	6	0	0	0	8	0	2	6	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	73	123	88	55	149	44	59	946	197	79	926	34
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	32	23	14	38	11	15	242	50	20	237	9
Total Analysis Volume [veh/h]	75	126	90	56	153	45	60	969	202	81	949	35
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.18	0.18	0.04	0.12	0.12	0.04	0.30	0.13	0.05	0.31	0.31
Intersection LOS	B											
Intersection V/C	0.654											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.557

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	3	1	2	28	0	149	56	989	0	1	877	17
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	2	12	0	3	0	0	0	22	31	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	3	14	29	3	153	58	1018	22	32	902	17
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	1	4	8	1	40	15	268	6	8	237	4
Total Analysis Volume [veh/h]	16	3	15	31	3	161	61	1072	23	34	949	18
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.02	0.02	0.02	0.10	0.04	0.34	0.34	0.02	0.30	0.30
Intersection LOS	A											
Intersection V/C	0.557											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.766

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	295	133	166	581	16	43	813	162	142	782	114
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	8	6	12	8	0	17	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	304	137	171	598	24	50	849	175	146	822	117
Peak Hour Factor	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	77	35	43	152	6	13	216	45	37	209	30
Total Analysis Volume [veh/h]	107	309	139	174	608	24	51	864	178	149	836	119
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.14	0.14	0.11	0.20	0.20	0.03	0.33	0.33	0.09	0.30	0.30
Intersection LOS	C											
Intersection V/C	0.766											

Intersection Level Of Service Report
Intersection 4: Project East Dwy (NS) at Florence Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	1017	0	0	894
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	12	0	0	31
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	1058	0	0	951
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	278	0	0	250
Total Analysis Volume [veh/h]	0	15	1114	0	0	1001
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	12.85	0.00	0.00	0.00	0.00
Movement LOS		B	A			A
95th-Percentile Queue Length [veh/ln]	0.00	0.10	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.45	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.85		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	B					

Opening Year (2023) Without Project

Intersection Level Of Service Report

Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.560

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	89	73	23	52	24	28	420	45	39	618	12
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	112	104	85	27	61	28	33	491	53	45	723	14
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	27	22	7	16	7	9	128	14	12	189	4
Total Analysis Volume [veh/h]	117	109	89	28	64	29	34	513	55	47	755	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.20	0.20	0.02	0.06	0.06	0.02	0.16	0.03	0.03	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.560											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.395

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	0	0	11	2	49	35	513	3	1	637	2
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	0	12	2	58	41	600	3	1	746	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	3	1	15	11	158	1	0	196	1
Total Analysis Volume [veh/h]	1	0	0	13	2	61	43	632	3	1	785	2
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.01	0.04	0.03	0.20	0.20	0.00	0.25	0.25
Intersection LOS	A											
Intersection V/C	0.395											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.617

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	60	398	97	83	146	6	16	431	68	83	590	114
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	466	113	97	171	7	19	505	79	97	690	134
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	122	30	25	45	2	5	132	21	25	180	35
Total Analysis Volume [veh/h]	73	487	118	101	179	7	20	528	83	101	722	140
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.19	0.19	0.06	0.06	0.06	0.01	0.19	0.19	0.06	0.27	0.27
Intersection LOS	B											
Intersection V/C	0.617											

Intersection Level Of Service Report

Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	71	120	78	48	145	43	57	912	191	75	894	29
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	127	82	50	153	45	61	966	203	79	948	31
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	33	21	13	39	12	16	247	52	20	243	8
Total Analysis Volume [veh/h]	77	130	84	51	157	46	63	990	208	81	971	32
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.18	0.18	0.03	0.13	0.13	0.04	0.31	0.13	0.05	0.31	0.31
Intersection LOS	B											
Intersection V/C	0.657											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.458

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	3	1	2	28	0	149	56	989	0	1	877	17
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1	2	30	0	158	60	1049	0	1	929	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	0	1	8	0	42	16	276	0	0	244	5
Total Analysis Volume [veh/h]	3	1	2	32	0	166	63	1104	0	1	978	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.10	0.04	0.35	0.00	0.00	0.31	0.31
Intersection LOS	A											
Intersection V/C	0.458											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	295	133	166	581	16	43	813	162	142	782	114
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	313	141	176	616	16	45	862	172	150	829	121
Peak Hour Factor	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	80	36	45	157	4	11	219	44	38	211	31
Total Analysis Volume [veh/h]	104	318	143	179	627	16	46	877	175	153	843	123
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.14	0.14	0.11	0.20	0.20	0.03	0.33	0.33	0.10	0.30	0.30
Intersection LOS	C											
Intersection V/C	0.774											

Opening Year (2023) With Project

3100 Florence Avenue Car Wash

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Report File: G:\...\AM OYP.pdf

Scenario 4 Opening Year (2023) With Project
9/7/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Mountain View Ave (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Thru	0.563	-	A
2	Mission Pl (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Thru	0.399	-	A
3	State St (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Thru	0.620	-	B
4	Project East Dwy (NS) at Florence Ave (EW)	Two-way stop	HCM 6th Edition	NB Right	0.010	10.4	B

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

Intersection Level Of Service Report
Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.563

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	89	73	23	52	24	28	420	45	39	618	12
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	2	1	0	0	0	2	0	1	3	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	112	104	87	28	61	28	33	493	53	46	726	16
Peak Hour Factor	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570	0.9570
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	27	23	7	16	7	9	129	14	12	190	4
Total Analysis Volume [veh/h]	117	109	91	29	64	29	34	515	55	48	759	17
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.20	0.20	0.02	0.06	0.06	0.02	0.16	0.03	0.03	0.24	0.24
Intersection LOS	A											
Intersection V/C	0.563											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.399

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	1	0	0	11	2	49	35	513	3	1	637	2
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	1	8	0	1	0	0	0	5	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	1	8	12	3	58	41	600	8	7	746	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	0	2	3	1	15	11	158	2	2	196	1
Total Analysis Volume [veh/h]	7	1	8	13	3	61	43	632	8	7	785	2
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.01	0.01	0.04	0.03	0.20	0.20	0.00	0.25	0.25
Intersection LOS	A											
Intersection V/C	0.399											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.620

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	60	398	97	83	146	6	16	431	68	83	590	114
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	0	0	0	2	3	8	4	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	71	466	113	97	171	9	22	513	83	97	693	134
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	122	30	25	45	2	6	134	22	25	181	35
Total Analysis Volume [veh/h]	74	487	118	101	179	9	23	537	87	101	725	140
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.19	0.19	0.06	0.06	0.06	0.01	0.20	0.20	0.06	0.27	0.27
Intersection LOS	B											
Intersection V/C	0.620											

Intersection Level Of Service Report
Intersection 4: Project East Dwy (NS) at Florence Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.010

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	524	0	0	656
Base Volume Adjustment Factor	1.1360	1.1360	1.1360	1.1360	1.1360	1.1360
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.00	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	7	8	0	0	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	7	621	0	0	773
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	2	163	0	0	203
Total Analysis Volume [veh/h]	0	7	654	0	0	814
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	10.44	0.00	0.00	0.00	0.00
Movement LOS		B	A			A
95th-Percentile Queue Length [veh/ln]	0.00	0.03	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.79	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.44		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.05					
Intersection LOS	B					

3100 Florence Avenue Car Wash

Vistro File: G:\...\PM.vistro
Report File: G:\...\PM OYP.pdf

Scenario 4 Opening Year (2023) With Project
9/7/2021

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Mountain View Ave (NS) at Florence Ave (EW)	Signalized	ICU 1	WB Right	0.670	-	B
2	Mission Pl (NS) at Florence Ave (EW)	Signalized	ICU 1	EB Thru	0.571	-	A
3	State St (NS) at Florence Ave (EW)	Signalized	ICU 1	EB Right	0.786	-	C
4	Project East Dwy (NS) at Florence Ave (EW)	Two-way stop	HCM 6th Edition	NB Right	0.032	13.0	B

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

Intersection Level Of Service Report

Intersection 1: Mountain View Ave (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	0	1	0	1	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	173.00	100.00	100.00	86.00	100.00	93.00	123.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	71	120	78	48	145	43	57	912	191	75	894	29
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	8	6	0	0	0	8	0	2	6	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	75	127	90	56	153	45	61	974	203	81	954	35
Peak Hour Factor	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760	0.9760
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	33	23	14	39	12	16	249	52	21	244	9
Total Analysis Volume [veh/h]	77	130	92	57	157	46	63	998	208	83	977	36
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.19	0.19	0.04	0.13	0.13	0.04	0.31	0.13	0.05	0.32	0.32
Intersection LOS	B											
Intersection V/C	0.670											

Intersection Level Of Service Report
Intersection 2: Mission Pl (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.571

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	45.00	110.00	100.00	100.00	47.00	100.00	100.00
Speed [mph]	25.00			25.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	3	1	2	28	0	149	56	989	0	1	877	17
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	2	12	0	3	0	0	0	22	31	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	3	14	30	3	158	60	1049	22	32	929	18
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	1	4	8	1	42	16	276	6	8	244	5
Total Analysis Volume [veh/h]	16	3	15	32	3	166	63	1104	23	34	978	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.02	0.02	0.02	0.10	0.04	0.35	0.35	0.02	0.31	0.31
Intersection LOS	A											
Intersection V/C	0.571											

Intersection Level Of Service Report
Intersection 3: State St (NS) at Florence Ave (EW)

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	0	1	0	0	1	0	0	1	0	0
Pocket Length [ft]	130.00	100.00	100.00	135.00	100.00	100.00	101.00	100.00	100.00	182.00	100.00	100.00
Speed [mph]	35.00			35.00			35.00			35.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	96	295	133	166	581	16	43	813	162	142	782	114
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	0	8	6	12	8	0	17	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	313	141	176	616	24	51	874	180	150	846	121
Peak Hour Factor	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830	0.9830
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	80	36	45	157	6	13	222	46	38	215	31
Total Analysis Volume [veh/h]	110	318	143	179	627	24	52	889	183	153	861	123
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	120
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	5	2	0	1	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.14	0.14	0.11	0.20	0.20	0.03	0.34	0.34	0.10	0.31	0.31
Intersection LOS	C											
Intersection V/C	0.786											

Intersection Level Of Service Report
Intersection 4: Project East Dwy (NS) at Florence Ave (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name						
Base Volume Input [veh/h]	0	0	1017	0	0	894
Base Volume Adjustment Factor	1.0290	1.0290	1.0290	1.0290	1.0290	1.0290
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Rate	1.00	1.03	1.03	1.00	1.00	1.03
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	12	0	0	31
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	1089	0	0	979
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	287	0	0	258
Total Analysis Volume [veh/h]	0	15	1146	0	0	1031
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	13.04	0.00	0.00	0.00	0.00
Movement LOS		B	A			A
95th-Percentile Queue Length [veh/ln]	0.00	0.10	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.51	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.04		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	B					

APPENDIX F

SIMILAR CAR WASH FACILITIES SURVEY DATA

Matt's Express Carwash Maximum Trip Generation Calculations

Location	Peak Hour						Daily
	Morning			Evening			
	In	Out	Total	In	Out	Total	
Redlands	35	29	64	48	51	99	926
Rialto	29	29	58	67	67	134	944
Maximum	35	29	64	67	67	134	944

City of Redlands
Matt's Express Car Wash
SWC of Tennessee Street and Lugonia Avenue
24 Hour Driveway Counts

	North Driveway	
	Entering	Exiting
	WB	EB
0:00	0	0
0:15	0	0
0:30	0	0
0:45	0	0
1:00	0	0
1:15	0	0
1:30	0	0
1:45	0	0
2:00	0	0
2:15	0	0
2:30	0	0
2:45	0	0
3:00	0	0
3:15	0	0
3:30	0	0
3:45	0	0
4:00	0	0
4:15	0	0
4:30	0	0
4:45	0	0
5:00	0	0
5:15	0	0
5:30	1	0
5:45	0	0
6:00	0	0
6:15	0	0
6:30	1	0
6:45	0	0
7:00	1	1
7:15	0	0
7:30	0	0
7:45	0	0
8:00	0	1
8:15	0	2
8:30	0	2
8:45	0	1
9:00	0	2
9:15	0	2
9:30	0	3
9:45	0	5
10:00	0	6
10:15	0	1
10:30	0	4
10:45	0	1
11:00	1	3
11:15	0	1
11:30	0	4
11:45	2	2
12:00	0	1
12:15	2	2
12:30	2	6
12:45	0	3
13:00	0	3
13:15	0	5
13:30	0	6
13:45	0	0
14:00	0	3
14:15	1	3
14:30	0	5
14:45	0	2
15:00	0	1
15:15	0	1
15:30	0	1
15:45	0	2
16:00	1	3
16:15	0	2
16:30	0	2
16:45	0	5
17:00	0	1
17:15	0	1
17:30	0	0
17:45	0	2
18:00	0	4
18:15	0	1
18:30	1	1
18:45	0	0
19:00	0	0
19:15	0	0
19:30	0	0
19:45	0	0
20:00	0	0
20:15	0	0
20:30	0	0
20:45	0	0
21:00	0	0
21:15	0	0
21:30	0	0
21:45	0	0
22:00	0	0
22:15	0	0
22:30	0	0
22:45	0	0
23:00	0	0
23:15	0	0
23:30	0	0
23:45	0	0
	13	107

	South Driveway	
	Entering	Exiting
	WB	EB
0:00	0	0
0:15	0	0
0:30	0	0
0:45	0	0
1:00	0	0
1:15	0	0
1:30	0	0
1:45	0	0
2:00	0	0
2:15	0	0
2:30	0	0
2:45	0	0
3:00	0	0
3:15	0	0
3:30	0	0
3:45	0	0
4:00	0	0
4:15	0	0
4:30	0	0
4:45	1	0
5:00	0	1
5:15	0	0
5:30	0	0
5:45	1	1
6:00	0	0
6:15	0	0
6:30	0	0
6:45	0	0
7:00	2	2
7:15	0	0
7:30	0	0
7:45	1	0
8:00	8	2
8:15	7	4
8:30	12	9
8:45	8	8
9:00	3	7
9:15	13	4
9:30	9	9
9:45	11	8
10:00	11	5
10:15	5	7
10:30	17	8
10:45	12	14
11:00	6	5
11:15	10	8
11:30	9	2
11:45	9	10
12:00	9	11
12:15	28	17
12:30	10	9
12:45	22	8
13:00	17	22
13:15	14	11
13:30	15	12
13:45	14	14
14:00	11	4
14:15	18	14
14:30	18	13
14:45	13	15
15:00	9	9
15:15	14	10
15:30	7	9
15:45	8	8
16:00	11	7
16:15	15	9
16:30	13	10
16:45	8	13
17:00	9	2
17:15	3	7
17:30	7	6
17:45	2	1
18:00	0	1
18:15	0	0
18:30	0	0
18:45	0	0
19:00	0	0
19:15	0	0
19:30	0	0
19:45	0	0
20:00	0	0
20:15	0	0
20:30	0	0
20:45	0	0
21:00	0	0
21:15	0	0
21:30	0	0
21:45	0	0
22:00	0	0
22:15	0	0
22:30	0	0
22:45	0	0
23:00	0	0
23:15	0	0
23:30	0	0
23:45	0	0
	450	356

	TOTAL OF BOTH DRIVEWAYS	
	Entering	Exiting
	WB	EB
0:00	0	0
0:15	0	0
0:30	0	0
0:45	0	0
1:00	0	0
1:15	0	0
1:30	0	0
1:45	0	0
2:00	0	0
2:15	0	0
2:30	0	0
2:45	0	0
3:00	0	0
3:15	0	0
3:30	0	0
3:45	0	0
4:00	0	0
4:15	0	0
4:30	0	0
4:45	1	0
5:00	0	1
5:15	0	0
5:30	1	0
5:45	1	1
6:00	0	0
6:15	0	0
6:30	1	0
6:45	0	0
7:00	3	3
7:15	0	0
7:30	0	0
7:45	1	0
8:00	8	3
8:15	7	6
8:30	12	11
8:45	8	9
9:00	3	9
9:15	13	6
9:30	9	12
9:45	11	13
10:00	11	11
10:15	5	8
10:30	17	12
10:45	12	15
11:00	7	8
11:15	10	9
11:30	9	6
11:45	11	12
12:00	9	12
12:15	30	19
12:30	12	15
12:45	22	11
13:00	17	25
13:15	14	16
13:30	15	18
13:45	14	14
14:00	11	7
14:15	19	17
14:30	18	18
14:45	13	17
15:00	9	10
15:15	14	11
15:30	7	10
15:45	8	10
16:00	12	10
16:15	15	11
16:30	13	12
16:45	8	18
17:00	9	3
17:15	3	8
17:30	7	6
17:45	2	3
18:00	0	5
18:15	0	1
18:30	1	1
18:45	0	0
19:00	0	0
19:15	0	0
19:30	0	0
19:45	0	0
20:00	0	0
20:15	0	0
20:30	0	0
20:45	0	0
21:00	0	0
21:15	0	0
21:30	0	0
21:45	0	0
22:00	0	0
22:15	0	0
22:30	0	0
22:45	0	0
23:00	0	0
23:15	0	0
23:30	0	0
23:45	0	0
	463	463
Daily	926	

In	Out	Total
4	3	7
9	3	12
16	9	25
28	20	48
35	29	64

In	Out	Total
48	51	99
45	44	89
33	41	74
27	35	62
21	20	41

Peak Hour						
Morning			Evening			
In	Out	Total	In	Out	Total	Daily
35	29	64	48	51	99	926

Prepared by NDS/ATD

VOLUME

Project Dwy e/o N Cactus Ave

Day: Thursday
Date: 1/16/2014

City: Rialto
Project #: 14-6015-001

DAILY TOTALS	NB	SB	EB	WB	Total
	174	472	0	0	646

AM Period	NB		SB		EB		WB		TOTAL	
00:00	0		0						0	
00:15	0		0						0	
00:30	0		0						0	
00:45	0		0						0	
01:00	0		0						0	
01:15	0		0						0	
01:30	0		0						0	
01:45	0		0						0	
02:00	0		0						0	
02:15	0		0						0	
02:30	0		0						0	
02:45	0		0						0	
03:00	0		0						0	
03:15	0		0						0	
03:30	0		0						0	
03:45	0		0						0	
04:00	0		0						0	
04:15	0		0						0	
04:30	0		0						0	
04:45	0		0						0	
05:00	0		0						0	
05:15	0		0						0	
05:30	0		0						0	
05:45	0		0						0	
06:00	0		0						0	
06:15	0		0						0	
06:30	0		0						0	
06:45	0		0						0	
07:00	0		0						0	
07:15	0		5						5	
07:30	0		1						1	
07:45	3	3	7	13					10	16
08:00	0		9						9	
08:15	3		8						11	
08:30	3		5						8	
08:45	3	9	7	29					10	38
09:00	1		6						7	
09:15	1		6						7	
09:30	3		9						12	
09:45	4	9	9	30					13	39
10:00	4		8						12	
10:15	4		11						15	
10:30	5		9						14	
10:45	3	16	12	40					15	56
11:00	8		13						21	
11:15	7		14						21	
11:30	5		8						13	
11:45	7	27	13	48					20	75
TOTALS		64		160						224
SPLIT %		28.6%		71.4%						34.7%

PM Period	NB		SB		EB		WB		TOTAL	
12:00	6		16						22	
12:15	7		13						20	
12:30	4		15						19	
12:45	7	24	12	56					19	80
13:00	2		8						10	
13:15	1		12						13	
13:30	3		9						12	
13:45	3	9	8	37					11	46
14:00	6		12						18	
14:15	4		10						14	
14:30	4		10						14	
14:45	7	21	11	43					18	64
15:00	4		12						16	
15:15	5		9						14	
15:30	6		12						18	
15:45	5	20	8	41					13	61
16:00	3		18						21	
16:15	3		13						16	
16:30	6		23						29	
16:45	2	14	13	67					15	81
17:00	0		14						14	
17:15	6		11						17	
17:30	2		7						9	
17:45	4	12	12	44					16	56
18:00	5		6						11	
18:15	1		9						10	
18:30	4		6						10	
18:45	0	10	3	24					3	34
19:00	0		0						0	
19:15	0		0						0	
19:30	0		0						0	
19:45	0		0						0	
20:00	0		0						0	
20:15	0		0						0	
20:30	0		0						0	
20:45	0		0						0	
21:00	0		0						0	
21:15	0		0						0	
21:30	0		0						0	
21:45	0		0						0	
22:00	0		0						0	
22:15	0		0						0	
22:30	0		0						0	
22:45	0		0						0	
23:00	0		0						0	
23:15	0		0						0	
23:30	0		0						0	
23:45	0		0						0	
TOTALS		110		312						422
SPLIT %		26.1%		73.9%						65.3%

DAILY TOTALS	CARS IN	CARS OUT			Total
	174	472			646

AM Peak Hour	11:00	11:45				11:45
AM Pk Volume	27	57				81
Pk Hr Factor	0.844	0.891				0.920
7 - 9 Volume	12	42	0	0		54
7 - 9 Peak Hour	07:45	07:45				07:45
7 - 9 Pk Volume	9	29	0	0		38
Pk Hr Factor	0.750	0.806	0.000	0.000		0.864

PM Peak Hour	12:00	16:00				16:00
PM Pk Volume	24	67				81
Pk Hr Factor	0.857	0.728				0.698
4 - 6 Volume	26	111	0	0		137
4 - 6 Peak Hour	16:00	16:00				16:00
4 - 6 Pk Volume	14	67	0	0		81
Pk Hr Factor	0.583	0.728	0.000	0.000		0.698

Peak Hour						
Morning			Morning			
Inbound	Outbound	Total	Inbound	Outbound	Total	Daily
29	29	58	67	67	134	944

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