APPENDIX D
Traffic Impact Analysis

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City of Duarte

Duarte Station Specific Plan

Transportation Impact Study

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1. INTRODUCTION

This report documents the assumptions, methodologies, and findings of a study conducted by Fehr & Peers to evaluate the potential traffic impacts of the proposed Duarte Station Specific Plan Update (Project) located in the City of Duarte at the north-west corner of Duarte Road & Highland Avenue. The Project is the adoption and long-term implementation of the Duarte Station Specific Plan, as amended.

This report is divided into nine chapters, including this introduction. Chapter 2 describes the existing transportation conditions including an inventory of the streets, highways, and transit service in the study area, a summary of traffic volumes, and an assessment of operating conditions. The methodologies used to develop traffic forecasts for the Existing, Existing plus Project, Future, and Future plus Project scenarios and the forecasts themselves are included in Chapter 3. Chapter 4 presents an assessment of potential intersection traffic impacts of the proposed Project under both existing and future conditions. The results of the regional transportation system analysis are provided in Chapter 5. Chapter 6 provides a vehicle miles traveled (VMT) assessment of the Project. Chapter 7 summarizes the California Department of Transportation (Caltrans) freeway analysis. Chapter 8 includes a parking and site access overview. Chapter 9 contains the study conclusions. Appendices to this report include details of the technical analysis.

PROJECT DESCRIPTION

The "Project site" is located north of Duarte Road and west of Highland Avenue. The adjacent land uses include the I-210 Freeway to the north, residential uses to the west, City of Hope National Medical Center to the south, and commercial/industrial land uses to the east. Figure 1 illustrates the location of the Project in relation to the surrounding street system. Regional access to the Project site is provided by Interstate 605 (I-605) with access ramps approximately 0.7 miles north-east of the Project site, and Interstate 210 (I-210) with access ramps approximately 0.6 miles west of the Project site. The Project is located immediately north of the Duarte/City of Hope Gold Line Metro Station. The approximately 19.08-acre Specific Plan area contains four parcels, each under separate ownership. Currently, the Project site is occupied by 313,955 square feet of industrial land uses.

The Project as analyzed in this study involves the construction of up to 1,400 multi-family mid-rise residential dwelling units, 6,250 square feet of retail uses, 6,250 square feet of high turnover (sit-down) restaurant uses, and 100,000 square feet of office space. The Project as analyzed represented potential uses. Actual mix of uses may adjust over time; however, this estimate represents the highest anticipated intensity of uses.

A draft site plan of the Project is shown in Figure 2 and Figure 3. Phase 1 of the preliminary development plan is indicated in Figure 2. Phase 1 will also include an affordable housing development on Site C, just east of Site B. Future phases will support development on the northernmost and southernmost parcels. A conceptual plan for the southernmost parcel is included in Figure 3, with the northern parcel identified for future buildout as well.

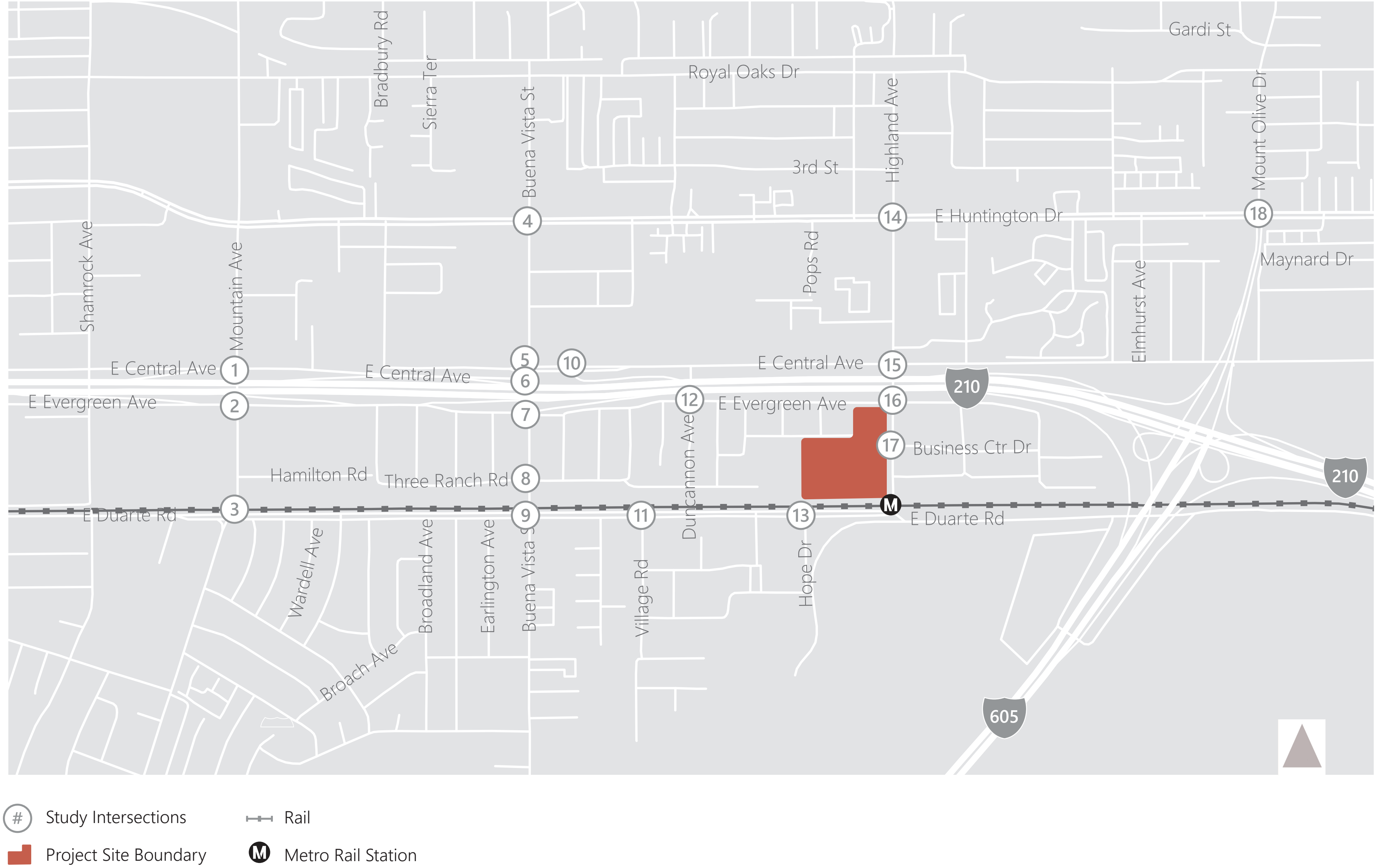


Figure 1

Study Intersection Locations

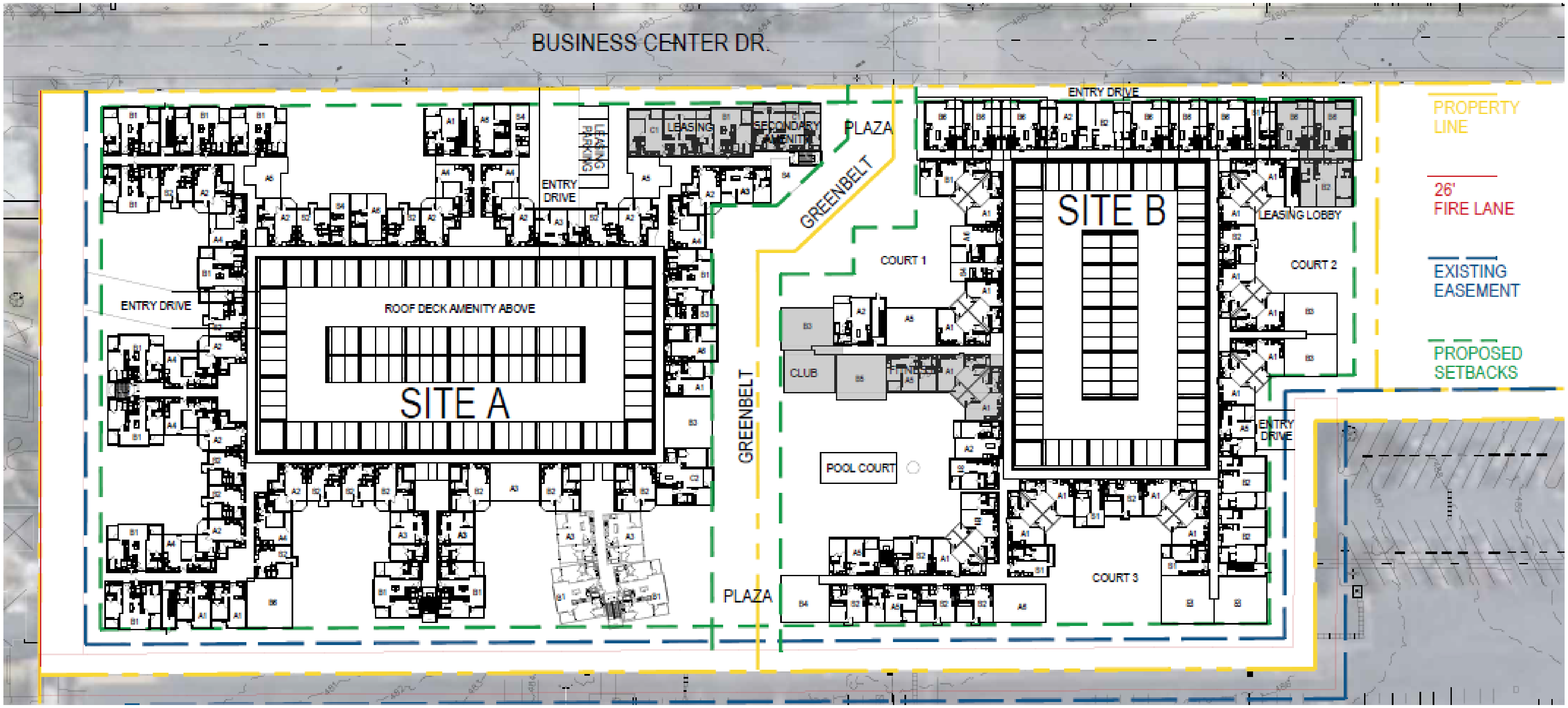


Figure 2

Draft Site Plan - Phase 1 Site A & B

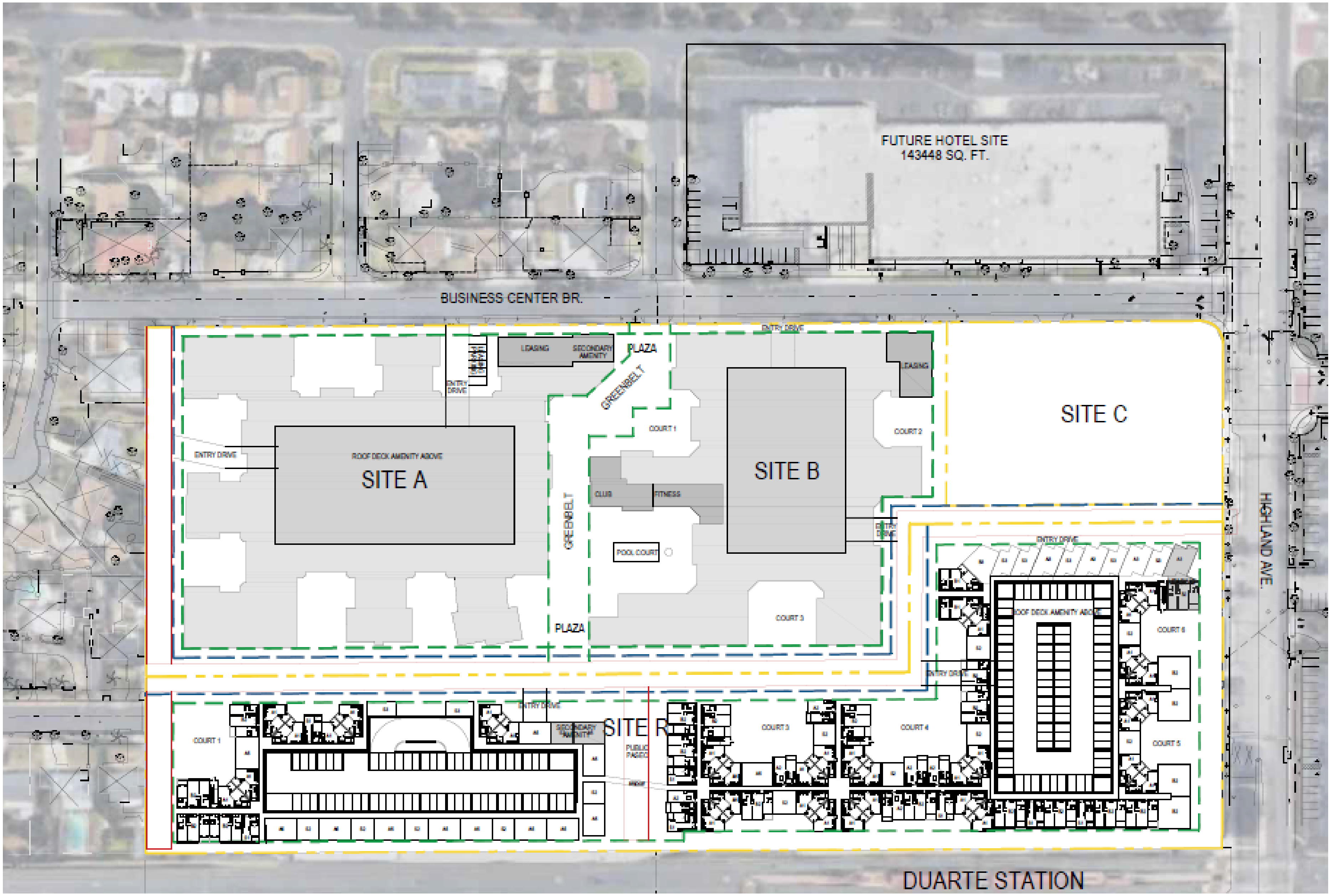


Figure 3

Draft Site Plan - Conceptual Future Phase Development

STUDY SCOPE

The scope of work for this study was determined in consultation with the City of Duarte Planning Division. The base assumptions and technical methodologies were discussed with the planning staff as part of the study approach (see Appendix A).

TRAFFIC SCENARIOS

The study assumes that the Project buildout of both Phase 1 and future phases will take place by 2025 and is directed at analyzing the potential Project-generated traffic impact on the local street system under both existing and future year traffic conditions. The following traffic scenarios have been developed and analyzed as part of this study:

- <u>Existing Conditions</u> – The analysis of existing traffic conditions is intended to provide a basis for the remainder of the study. The existing conditions analysis includes a description of the transportation system serving the Project site, existing traffic volumes, and an assessment of the operating conditions at the study analysis locations described below.
- <u>Existing plus Project Conditions</u> – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under existing conditions with the addition of Project-generated traffic. The impacts of the Project on existing traffic operating conditions were then identified.
- <u>Future (Year 2025) Conditions</u> – Future traffic projections without the Project were developed for the year 2025. The objective of this analysis was to project future traffic growth and operating conditions that could be expected to result from regional growth and related projects in the vicinity of the Project site by the year 2025.
- <u>Future (Year 2025) plus Project Conditions</u> – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under future conditions with the addition of Project-generated traffic. The impacts of the Project on future traffic operating conditions were then identified.

STUDY ANALYSIS LOCATIONS

Table 1 identifies the intersections studied as part of the traffic study, illustrated in Figure 1. The scope of the traffic analysis and selection of study intersections were developed in conjunction with City of Duarte planning and engineering staff. Eighteen study intersections were selected as part of the transportation analysis to be evaluated for potential Project impacts. Table 1 identifies the intersection cross streets and control type of each intersection.

TABLE 1
DUARTE STATION SPECIFIC PLAN
STUDY AREA INTERSECTIONS

ID	STUDY INTERSECTION	CONTROL TYPE
1	Mountain Ave & Central Ave	Signalized
2	Mountain Ave & Evergreen Ave	Signalized
3	Mountain Ave & Duarte Rd	Signalized
4	Buena Vista St & Huntington Dr	Signalized
5	Buena Vista St & Central Ave	Signalized
6	Buena Vista St & I-210 WB On-ramp	Signalized
7	Buena Vista St & Evergreen St/I-210 EB On-ramp	Signalized
8	Buena Vista St & 3 Ranch Rd	Unsignalized
9	Buena Vista St & Duarte Rd	Signalized
10	I-210 WB Off-ramp & Central Ave	Unsignalized
11	Village Rd & Duarte Rd	Unsignalized
12	Duncannon Ave & Evergreen St	Unsignalized
13	Hope Dr & Duarte Rd	Signalized
14	Highland Ave & Huntington Dr	Signalized
15	Highland Ave & Central Ave	Signalized
16	Highland Ave & Evergreen St	Unsignalized
17	Highland Ave & Business Center Dr	Signalized
18	I-605/Mt Olive Dr & Huntington Dr	Signalized

2. EXISTING CONDITIONS

A comprehensive data collection effort was undertaken to develop a detailed description of existing transportation conditions in the study area. The assessment of conditions relevant to this study includes a description of the study area, an inventory of the local street system in the vicinity of the Project site, a review of traffic volumes on these facilities, an assessment of the resulting operating conditions, and the current transit service in the study area. A detailed description of these elements is presented in this chapter.

STUDY AREA

The Project site is located within the City of Duarte on Highland Avenue and Business Center Drive. The study area selected for analysis extends to Mountain Avenue to the west, Huntington Drive to the north, Mount Olive Drive to the east, and Duarte Road to the south. The study area also contains the Interstate-210 (I-210) and Interstate-605 (I-605) freeways, which are under the jurisdiction of the California Department of Transportation (Caltrans). See Figure 1 for a graphic depiction of the study area.

EXISTING STREET SYSTEM

Major streets serving the study area include Huntington Drive, Central Avenue, and Duarte Road in the east-west direction and Mountain Avenue, Buena Vista Street, and Highland Avenue in the north-south direction. Regional access to and from the study area is provided by the I-210 Freeway immediately north and I-605 Freeway 0.4 miles east of the Project site. The characteristics of analyzed streets serving the study area are listed below. The street descriptions include the existing designation under the current City of Duarte General Plan Circulation Element.

Freeways

- **I-210** runs in an east-west direction north of the Project site and extends from I-5 in the west to San Bernardino in the east. I-210 provides four general travel lanes and one high-occupancy vehicle (HOV) lane in each direction within the study area. A number of interchanges are provided between Mountain Avenue and Mount Olive Drive in the study area.
- **I-605** runs generally in a north-south direction east of the Project site and extends from Huntington Drive in Duarte in the north to I-405 Freeway in the south. The freeway provides four general travel lanes in each direction within the study area. The Project site can access I-605 via Huntington Drive to the north and Arrow Highway in the south.

East – West Streets

- **Huntington Drive** is an arterial street that runs through the northern portion of the study area. It is a component of Historic U.S. Route 66. Huntington Drive provides two travel lanes in each direction with a median and left-turn pockets through the corridor. Generally, the street allows parking on both sides of the roadway with a posted speed limit of 40 miles per hour.

- **Central Avenue** is a collector street that runs parallel to and north of I-210. The street generally provides one travel lane in each direction between Fernley Drive and Buena Vista Street, after which it turns into a two-lane one-way street in the westbound direction. It also provides access to the I-210 ramps. The corridor allows parking on both sides of the roadway east of Buena Vista and the posted speed limit is 35 miles per hour.

- **Evergreen Street** is a collector street that runs parallel to and south of the I-210. The street provides two travel lanes in the eastward direction with access to I-210 between Mountain Avenue and Buena Vista Street and no parking is allowed. The street provides one lane in each direction between Buena Vista Street and Highland Avenue with parking allowed on the south side of the street and limited parking on the north side of the street. The posted speed limit is 30 miles per hour.

- **Business Center Drive** is a local street that runs through the Project site. The street provides one travel lane in each direction and parking on both sides of the street.

- **Three Ranch Road** is a local street that runs just west of the Project site through residential neighborhoods. The street provides one travel lane in each direction and allows parking on both sides of the street.

- **Duarte Road** is an arterial street that runs directly south of the Project site parallel to the Metro Gold Line. The street provides two travel lanes in each direction with a median and left-turn pockets throughout the corridor. Parking is not allowed on either side of the street. The posted speed limit is 40 miles per hour.

North – South Streets

- **Mountain Avenue** is an arterial street that runs in the western portion of the study area. The street provides two travel lanes in each direction north of Duarte Road and one travel lane in each direction south of Duarte Road. Mountain Avenue also has a center turn lane. Parking is generally allowed on both sides of the street south of Duarte Road, and the posted speed limit is 40 miles per hour.

- **Buena Vista Street** is an arterial street that runs through the center of the study area. The street provides two travel lanes in each direction and has parking on both sides of the street south of I-210. North of the freeway, the street has bike lanes on both sides. The posted speed limit is 35 miles per hour.

- **Village Road** is a private drive that runs south of Duarte Road between Hope Drive and Buena Vista Street. The street provides one travel lane in each direction, and no parking is allowed.

- **Hope Drive** is a private drive that runs south of Duarte Road between Village Road and Highland Avenue. The street provides two lanes in the southern direction and one in the northern direction. No parking is allowed on either side.

- **Duncannon Avenue** is a local street that runs west of the Project site. The street provides one travel lane in each direction, and parking is allowed on both sides of the street.

- **Highland Avenue** is an arterial street that runs east of the Project site. The street provides two travel lanes in each direction and has parking on both sides of the street, with the exception of immediately adjacent to the Project site. The posted speed limit is 35 miles per hour.

- **Mt. Olive Drive** is a collector street that runs north from the I-605 terminus. The street provides one travel lane in the north direction and two travel lanes in the south direction. Parking is allowed on the west side of the street and is restricted on the east of the street. The posted speed limit is 35 miles per hour.

Lane configurations of the study intersections are illustrated in Appendix C.

TRANSIT LINES

Table 2 and Figure 4 show the various transit lines providing service in the Project vicinity. Transit lines in the vicinity of the Project site include:

- <u>Metro Gold Line</u> – The Metro Gold Line is a light-rail transit line running from East Los Angeles to Azusa via Los Angeles Union Station. The Metro Gold Line opened on March 5, 2016. The study area is served by the Duarte/City of Hope Station (directly accessible from the Project site). The Gold Line has an average headway of seven minutes during the weekday AM and PM peak hours.

- <u>Metro Line 264/267</u> – Metro Line 264/267 provides local service running between Altadena and Duarte. Line 264 has an average headway of approximately 60 minutes during the weekday AM and

PM peak hours. The line runs east to west through the Project site and connects to the Duarte/City of Hope Light Rail Station.

- Foothill Transit Line 187 – Foothill Transit Line 187 provides service to Pasadena, Arcadia, Duarte, and Azusa. Line 187 has an average headway of 15 to 20 minutes during the weekday AM and PM peak hours. Line 187 runs in the northern section of the study area.

- Foothill Transit Line 272 – Foothill Transit Line 272 provides service between Duarte and West Covina, through Irwindale and Baldwin Park. Line 272 has an average headway of 30-60 minutes during the weekday AM and PM peak hours. Line 272 runs directly through the northern and southern sections of the study area.

- Foothill Transit Line 494 – Foothill Transit Line 494 provides service between El Monte and San Dimas, through Monrovia, Arcadia, Duarte, Azusa, Glendora, and San Dimas. Line 494 has an average headway of 60 minutes during the weekday AM and PM peak hours. Line 494 runs from east to west through the northern edge of the study area.

- Foothill Transit Line 690 – Foothill Transit Line 690 provides service between Pasadena and Claremont through La Verne, San Dimas, Glendora, Azusa, and Pasadena. Line 690 has an average headway of 15-20 minutes during the weekday AM and PM peak hours. Line 690 runs east to west through the northern edge of the study area.

- Duarte Transit Green Line – The Duarte Transit Green Line operates in a clockwise direction around the city of Duarte. The Green Line has an average headway of one hour during the weekday AM and PM peak hours. The Green Line runs around the study area.

- Duarte Transit Blue Line – The Duarte Transit Blue Line operates in a counterclockwise direction around the city of Duarte. The Blue Line has an average headway of one hour during the weekday AM and PM peak hours. The Blue Line runs around the study area.

TABLE 2
DUARTE STATION SPECIFIC PLAN
STUDY AREA TRANSIT SERVICE

Transit Route	Operator	Service Type	Service From	Via	Weekday Peak Period Headways	
					AM	PM
Gold Line	Metro	Light Rail	Azusa to Union Station	Duarte Road	7 mins.	7 mins.
264	Metro	Local	Altadena to Duarte	Duarte Road	60 mins.	60 mins.
187	Foothill Transit	Local	Pasadena to Azusa	Huntington Drive	15-20 mins.	15-20 mins.
272	Foothill Transit	Local	Duarte to Baldwin Park	Buena Vista Street	30-60 mins.	30-60 mins.
492	Foothill Transit	Local	Montclair to El Monte	Arrow Highway	20-30 mins.	20-30 mins.
494	Foothill Transit	Local	El Monte to San Dimas	Huntington Avenue	60 mins.	60 mins.
690	Foothill Transit	Local	Pasadena to Claremont	Foothill Blvd	15-20 mins.	15-20 mins.
Green Line	Duarte Transit	Local	Duarte	Huntington Drive	60 mins.	60 mins.
Blue Line	Duarte Transit	Local	Duarte	Huntington Drive	10-15 mins.	10-15 mins.

Source:

Duarte General Plan, 2007

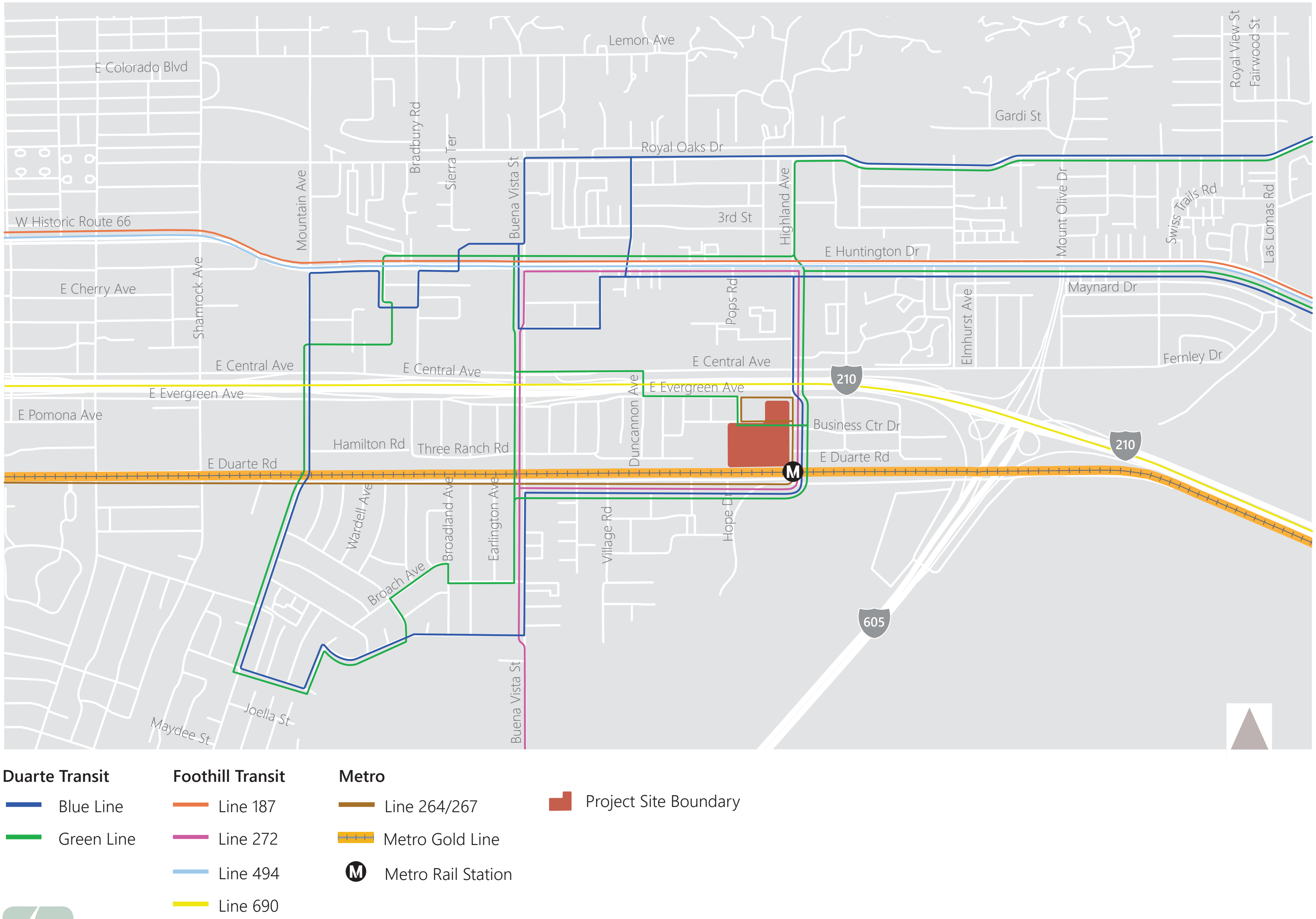


Figure 4

Study Area Transit Service

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Bicycle Facilities

Figure 5 shows existing and planned City of Duarte designated bicycle facilities in the Project vicinity. Per Caltrans, a Class I bicycle facility is a bike path, which has exclusive right of way for bicyclists and pedestrians away from the roadway with crossflows by motor traffic minimized. A Class II bicycle facility is a bike lane established along the street and is defined by pavement striping and signage to delineate a portion of the roadway dedicated for bicycle travel. The bike lane can also be buffered to provide a greater separation from adjacent traffic. A Class III bicycle facility is a bike route which designates a preferred route for bicyclists on streets shared with motor traffic and is not designated as a separate facility. A Class IV bike facility is a separated bikeway, often referred to as a protected bike lane that is physically separated from motor traffic with a vertical feature.

Below is a description of the existing bicycle facilities in the City of Duarte:

- Royal Oaks Drive – a Class I bicycle facility on Royal Oaks Drive provides a bike path in the northern part of the study area, from Buena Vista Street to Vineyard Avenue.
- Duarte Road – a Class II bicycle facility on Duarte Road provides a bike lane from Mountain Avenue to the Duarte Gold Line station.
- Emerald Necklace Bike Trail – a Class I bicycle facility is located within the Santa Fe Recreation area adjacent to the City of Hope in the southern part of the study area. It provides a bike path connecting San Gabriel River Bike Trail and Duarte/City of Hope Gold Line Station.
- Buena Vista Street – a Class II bicycle facility on Buena Vista Street provides a bike lane from Huntington Drive to Central Avenue.
- Shamrock Avenue – a Class III bicycle facility on Shamrock Avenue provides a bike route north of Central Avenue.

In addition to the existing facilities, the City of Duarte is planning to add other Class I, Class II, and Class III bicycle facilities in the Project vicinity. Proposed Class I bicycle facilities include a bike path south of Duarte Road between Buena Vista Street and Village Road. Proposed Class II bicycle facilities include a bike lane on Buena Vista Street between Central Avenue and Royal Oaks Drive and on Highland Avenue between Evergreen Street and Royal Oaks Drive. Proposed Class III bicycle facilities include a bike route on Royal Oaks Drive east of Bradbury Avenue, on Central Avenue east of Buena Vista Street, on Evergreen Street between Duncannon Avenue and Highland Avenue, on Highland Avenue between Duarte Road and Evergreen Street, and on Buena Vista Street south of Central Avenue.

Pedestrian Facilities

There are pedestrian facilities adjacent to the Project site. Along the eastern edge of the Project site (Highland Avenue), an approximately nine-foot sidewalk is present on the western side of Highland Avenue. Business Center Drive, which runs through the Project site, has a six-foot sidewalk present on the southern side. There is no sidewalk present on the northern edge of the Project site along Evergreen Street.

A six-foot sidewalk is present on the southern side of Duarte Road between Mountain Avenue and 800 feet east of Hope Drive, where it abruptly ends. On the northern side of Duarte Road, an approximately 10-foot sidewalk is present between Mountain Avenue and Highland Avenue.

Pedestrian facilities improvements such as continuations of sidewalks, streetscape improvements, and installations of high-visibility crosswalks are planned along Duarte Road. New sidewalk construction on the southern side of Duarte Road between Hope Drive and East Circle Drive is currently grant-funded.

The following improvements are also anticipated through the Active Transportation Program (ATP):

- Evergreen Pedestrian Walkway – Sidewalk along the north side of Evergreen Street between Brightside Avenue and Highland Avenue
- Pedestrian / Bicyclist Connection Corridor – Pedestrian corridor south of the I-210 between Buena Vista Street and Brightside Avenue
- Central Pedestrian Walkway – Sidewalk along the south side of Central Avenue between Bradbury Avenue to Highland Avenue
- Pedestrian Underpass Connectivity – Advanced pedestrian lighting under the I-210 underpasses along Highland Avenue, Duncannon Avenue, and Buena Vista Avenue

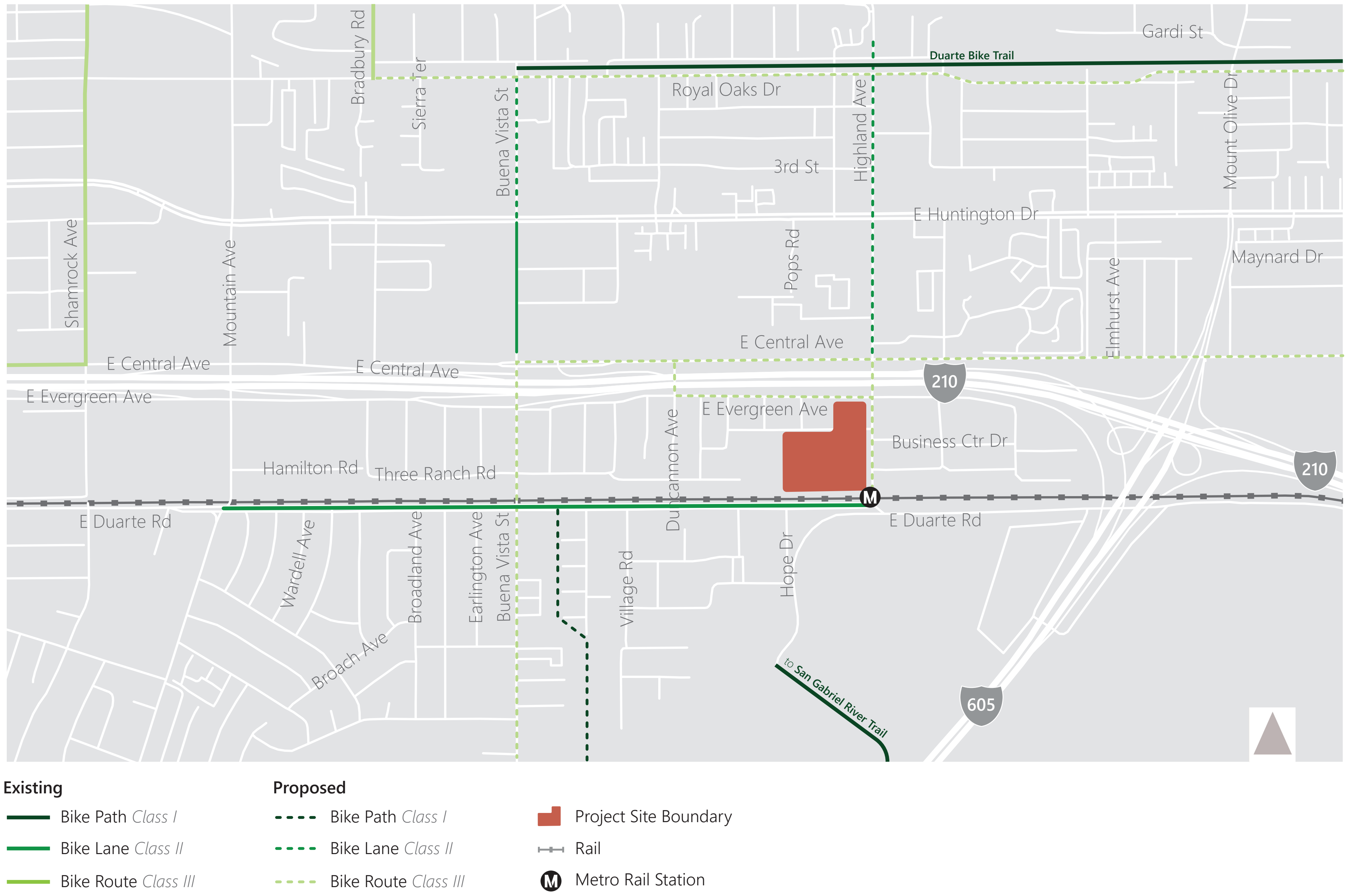


Figure 5

Study Area Bicycle Facilities

EXISTING TRAFFIC VOLUMES AND LEVEL OF SERVICE

This section presents existing base peak hour traffic volumes, describes the methodology used to assess the traffic conditions at each intersection, and analyzes the operating conditions at each, indicating volume-to-capacity (V/C) ratios, delay, and levels of service (LOS).

EXISTING BASE TRAFFIC VOLUMES

Intersection turning movement counts were conducted during the weekday AM peak period (between 7:00 and 9:00 AM) and weekday PM peak period (between 4:00 PM and 6:00 PM) on December 4, 2018. Weekday AM and PM peak hour turning movement counts were determined for each study intersection using these counts.

Traffic count data for the study intersections are contained in Appendix B.

LEVEL OF SERVICE METHODOLOGY

The methodology utilized to calculate the LOS depended on the intersection’s method of traffic control. Two different intersection LOS methodologies were used when reviewing the Project’s existing traffic conditions: the Intersection Capacity Utilization (ICU) and the *2010 Highway Capacity Manual* (HCM).

Intersection Capacity Utilization

The ICU method of intersection capacity analysis determines the intersection V/C ratio and corresponding LOS for the turning movements and intersection characteristics at signalized intersections. “Capacity” represents the maximum volume of vehicles in the critical lanes that have a reasonable expectation of passing through an intersection in one hour under prevailing roadway and traffic conditions. The ICU method calculates the V/C ratio for each critical movement by dividing volume by capacity. The V/C ratios for each critical movement are summed with an added allowance for yellow clearance to determine the total intersection V/C ratio. The total intersection V/C ratio is then matched to the appropriate LOS based on the definitions provided in Table 3.

TABLE 3
LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service	Intersection Capacity Utilization	Definition
A	0.000-0.600	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.
B	0.601-0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701-0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801-0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901-1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

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

Highway Capacity Manual

The HCM unsignalized intersection delay was used to determine the intersection delay in seconds and corresponding LOS for the turning movements and intersection characterizes at the unsignalized intersections. The calculation of delay represents the amount of delay experienced by vehicles passing through the intersection. The unsignalized intersections were analyzed using the all-way stop method and the 2-way stop method from the HCM 2010. Delay was calculated based on the worst-case approach (in the case of one- or two-way stop-controlled intersections), or average delay (in the case of all-way stop-controlled intersections), and used to find the corresponding LOS, as presented in Table 4.

EXISTING LEVEL OF SERVICE

Existing traffic volumes were analyzed to determine the projected V/C ratios, delay, and LOS for each intersection. Table 5A and Table 5B summarize the existing weekday peak hour LOS for signalized and unsignalized intersections respectively. The following signalized intersections operate at LOS E or worse under existing conditions:

2. Mountain Avenue & Evergreen Avenue (PM peak hour)
9. Buena Vista Street & Duarte Road (PM peak hour)
18. I-605 Mount Olive Drive & Huntington Drive (PM peak hour)

The following unsignalized study intersections operate at LOS E or worse under existing conditions:

10. I-210 Westbound off-ramp & Central Avenue (AM/PM peak hour)
11. Village Road & Duarte Road (AM/PM peak hour)

Detailed LOS calculations are provided in Appendix D.

TABLE 4
LEVEL OF SERVICE DEFINITIONS FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Average Total Delay (seconds/vehicle)
A	< 10.0
B	> 10.0 and < 15.0
C	> 15.0 and < 25.0
D	> 25.0 and < 35.0
E	> 35.0 and < 50.0
F	> 50.0

Source: *Highway Capacity Manual,*
Transportation Research Board, 2010.

TABLE 5A
DUARTE STATION SPECIFIC PLAN
EXISTING YEAR (2018) INTERSECTION LEVELS OF SERVICE
SIGNALIZED STUDY INTERSECTIONS

NO.	INTERSECTION	PEAK HOUR	EXISTING (2018)	
			V/C	LOS
1	Mountain Ave & Central Ave	AM	0.771	C
		PM	0.761	C
2	Mountain Ave & Evergreen Ave	AM	0.652	B
		PM	0.959	**E**
3	Mountain Ave & Duarte Rd	AM	0.600	A
		PM	0.678	B
4	Buena Vista St & Huntington Dr	AM	0.691	B
		PM	0.787	C
5	Buena Vista St & Central Ave	AM	0.556	A
		PM	0.613	B
6	Buena Vista St & I-210 WB On-ramp	AM	0.390	A
		PM	0.524	A
7	Buena Vista St & Evergreen St/I-210 EB On-ramp	AM	0.597	A
		PM	0.595	A
9	Buena Vista St & Duarte Rd	AM	0.808	D
		PM	0.920	**E**
13	Hope Dr & Duarte Rd	AM	0.330	A
		PM	0.415	A
14	Highland Ave & Huntington Dr	AM	0.552	A
		PM	0.821	D
15	Highland Ave & Central Ave	AM	0.565	A
		PM	0.763	C
17	Highland Ave & Business Center Dr	AM	0.346	A
		PM	0.433	A
18	I-605/Mt Olive Dr & Huntington Dr	AM	0.891	D
		PM	1.096	**F**

TABLE 5B
DUARTE STATION SPECIFIC PLAN
EXISTING YEAR (2018) INTERSECTION LEVELS OF SERVICE
UNSIGNALIZED STUDY INTERSECTIONS

NO.	INTERSECTION	PEAK HOUR	EXISTING (2018)	
			Delay (s)	LOS
8	Buena Vista St & 3 Ranch Rd	AM	18.9	C
		PM	22.5	C
10	I-210 WB Off-ramp & Central Ave	AM	94.4	**F**
		PM	94.9	**F**
11	Village Rd & Duarte Rd	AM	49.1	**E**
		PM	44.3	**E**
12	Duncannon Ave & Evergreen St	AM	7.8	A
		PM	7.5	A
16	Highland Ave & Evergreen St	AM	24.3	C
		PM	22.0	C

Notes:

Average vehicular delay reported for worst case approach for unsignalized intersections.

3. TRAFFIC PROJECTIONS

PROJECT TRAFFIC

The development of trip generation estimates for the Project was a three-step process: trip generation, trip distribution, and traffic assignment.

PROJECT TOTAL TRIP GENERATION

Trip generation rates published in *Trip Generation, 10th Edition* (Institute of Transportation Engineers [ITE], 2017) were used to calculate Project trip generation estimates for the proposed multi-family housing (mid-rise), high-turnover (sit down) restaurant, retail, and office land uses.

Several trip reduction adjustments were applied to the Project's gross trip generation estimates based on the Project's design, location, programming, and provided amenities. Discussion of these credits is summarized below.

Internal Capture Adjustment

Internal trip capture is the portion of vehicular trips generated by a mixed-use development that both begin and end within the development. An example of this would be residents or employees eating dinner at one of the Project's restaurants. Internal trip estimates were made for each of the Project's land uses, based on the specific mix of uses and sizes within the Project utilizing Transportation Research Board (TRB) National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments. This methodology is a best practice for determining internal capture reductions. The NCHRP methodology considers the specific mix and size of uses to determine internal trip capture rates by land use and analysis period.

Transit/Walk/Bike Adjustment

The Project is located in a transit-rich environment, adjacent to the Metro Gold Line Duarte/City of Hope Light Rail Station, and in close proximity to local bus lines. A 15% vehicle trip reduction was applied to each land use; all are located within a quarter-mile walking distance of high-quality transit.

Pass-by Adjustment

Pass-by credits were applied to retail and restaurant uses based on the *Trip Generation Handbook: An ITE Recommended Practice (2003)*. Pass-by trip credits are commonly applied to commercial uses to reflect the situation where a percentage of patrons to the establishment are traveling on the roadway (for instance, on their way to work) and stop to shop or eat. Under this situation, that trip is already on the roadway and is generated by the ultimate destination of that person's trip. A reduction of 20% was applied to the high-turnover (sit down) restaurant uses and reduction of 50% was applied to the retail uses. No pass-by trip credit is applied to the residential and office uses because traveling to this use is typically the final destination of one's trip, not a destination one chooses as they pass by.

Existing Use Adjustment

Existing uses at the Project site are identified as general light industrial land uses. Generally, when existing land uses are replaced by higher-density uses, the net new trip generation of the new Project is credited because a portion of the new Project's trips are replacing existing trips on the roadway network to the same site for the prior use.

As identified in Table 6, the Project is expected to generate a total estimated net external 6,209 weekday daily trips, including 374 trips (94 inbound/280 outbound) during the weekday AM peak hour and 486 trips (296 inbound/190 outbound) during the weekday PM peak hour.

PROJECT TRAFFIC DISTRIBUTION

The Project trip distribution is based on a variety of different sources such as the Southern California Association of Governments (SCAG) Travel Demand Forecasting Model, the prior Duarte Specific Plan, other approved projects nearby, and Project team experience. A select zone analysis within the SCAG Travel Demand Forecasting Model was used to inform the general distribution patterns for this study. The model used information from the traffic analysis zone (TAZ) where the Project is located to estimate the distribution of trips.

Other important factors used to inform the Project trip distribution included: the characteristics of the street system serving the Project site; accessibility of routes to and from the Project site; locations of commercial centers to which residents of the Project would be drawn; and locations of residential areas from which other persons would be drawn. These are factored into the model but also are used to help refine the outputs. The distribution of Project trips is illustrated in Figure 6.

TABLE 6
DUARTE STATION SPECIFIC PLAN
TRIP GENERATION ESTIMATES

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour			Daily	AM Peak Hour Trips			PM Peak Hour Trips		
				Rate	In%	Out%	Rate	In%	Out%		In	Out	Total	In	Out	Total
PROPOSED PROJECT																
Multifamily Housing (Mid-Rise)[b]	221	1,400 DU	[b]	[b]	26%	74%	[b]	61%	39%	7,628	118	337	455	340	218	558
Less: Internal capture [c]			*3%*		*1%*	*3%*		*3%*	*7%*	*(229)*	*(1)*	*(10)*	*(11)*	*(10)*	*(15)*	*(25)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(1,110)*	*(18)*	*(49)*	*(67)*	*(50)*	*(30)*	*(80)*
Net External Vehicle Trips										6,289	99	278	377	280	173	453
High-Turnover (Sit Down) Restaurant	932	6.25 ksf	112.18	9.94	55%	45%	9.77	62%	38%	701	34	28	62	38	23	61
Less: Internal capture [c]			*28%*		*41%*	*38%*		*25%*	*46%*	*(196)*	*(14)*	*(11)*	*(25)*	*(10)*	*(11)*	*(21)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(76)*	*(3)*	*(3)*	*(6)*	*(4)*	*(2)*	*(6)*
Total Driveway Trips										429	17	14	31	24	10	34
Less: Pass-by [e]			*20%*	*20%*			*20%*			*(86)*	*(3)*	*(3)*	*(6)*	*(5)*	*(2)*	*(7)*
Net External Vehicle Trips										343	14	11	25	19	8	27
Retail	820	6.25 ksf	37.75	0.94	62%	38%	3.81	48%	52%	236	4	2	6	12	12	24
Less: Internal capture [c]			*42%*		*57%*	*33%*		*70%*	*55%*	*(99)*	*(2)*	*(1)*	*(3)*	*(8)*	*(7)*	*(15)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(21)*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										116	2	1	3	4	5	9
Less: Pass-by [e]			*50%*	*50%*			*50%*			*(58)*	*(1)*	*(1)*	*(2)*	*(2)*	*(3)*	*(5)*
Net External Vehicle Trips										58	1	0	1	2	2	4
Office	710	100.00 ksf	[f]	[f]	86%	14%	[f]	16%	84%	1,061	103	17	120	18	96	114
Less: Internal capture [c]			*15%*		*17%*	*74%*		*60%*	*5%*	*(159)*	*(18)*	*(13)*	*(31)*	*(11)*	*(5)*	*(16)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(135)*	*(13)*	*(1)*	*(14)*	*(1)*	*(14)*	*(15)*
Net External Vehicle Trips										767	72	3	75	6	77	83
TOTAL DRIVEWAY TRIPS										7,601	190	296	486	314	265	579
TOTAL PROJECT EXTERNAL VEHICLE TRIPS										7,457	186	292	478	307	260	567
EXISTING USE CREDIT																
General Light Industrial	110	313.96 ksf	[g]	[g]	88%	12%	[g]	13%	87%	1,248	92	12	104	11	70	81
Net External Vehicle Trips										1,248	92	12	104	11	70	81
TOTAL EXISTING USE CREDIT										1,248	92	12	104	11	70	81
NET INCREMENTAL EXTERNAL TRIPS										6,209	94	280	374	296	190	486

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition* , 2017.

[b] ITE Multifamily Housing (Mid-Rise) trip generation equations used rather than linear trip generation rate:
Daily: T = 5.45*A - 1.75, where T = trips, A = area in ksf (Suburban/Urban rate used)
AM Peak Hour: Ln(T) = 0.98*LN(A) - 0.98, where T = trips, A = area in ksf (Suburban/Urban equation used)
PM Peak Hour: Ln(T) = 0.96*LN(A) - 0.63, where T = trips, A = area in ksf (Suburban/Urban equation used)

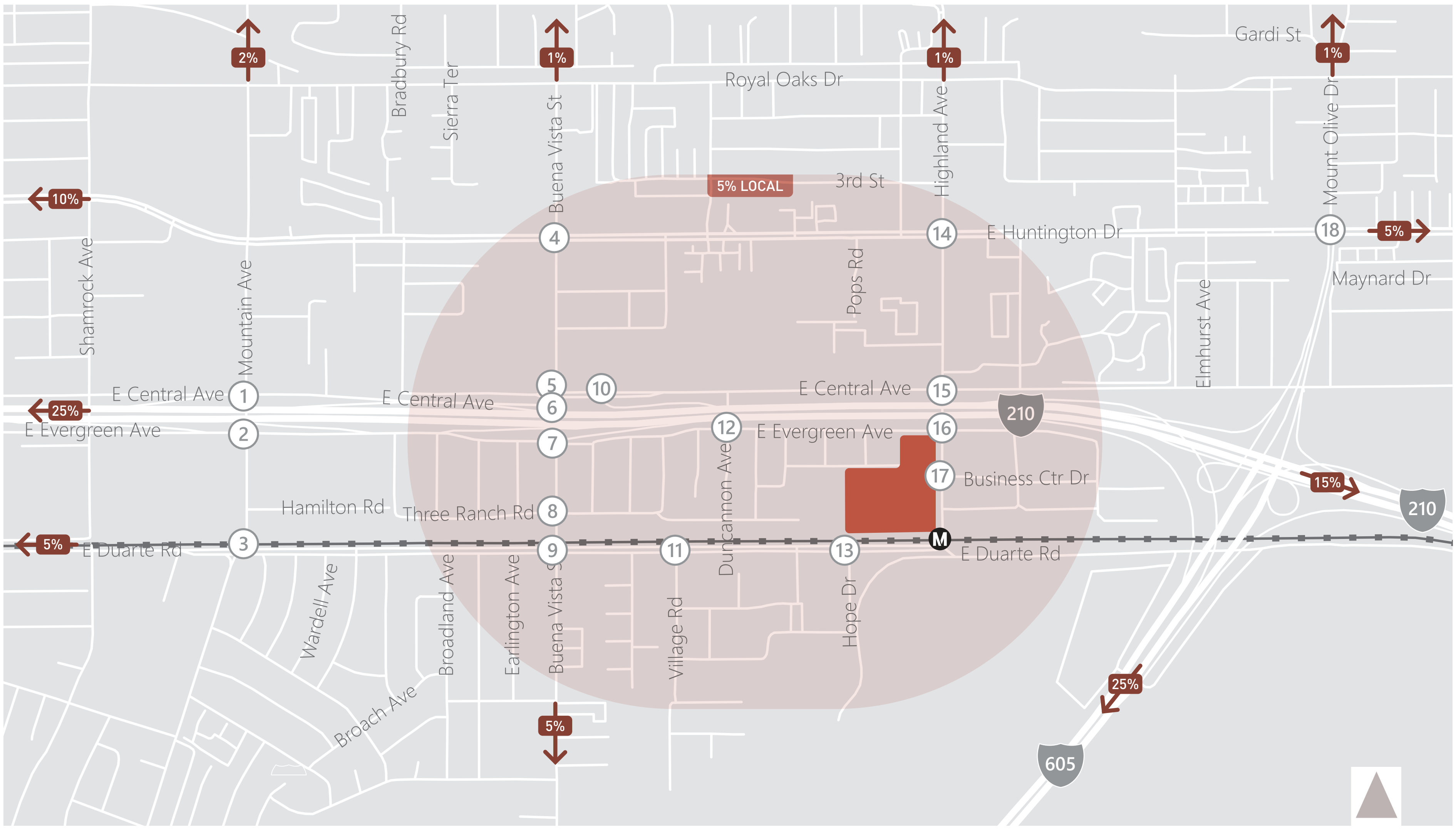
[c] Internal capture represents the percentage of trips between land uses that occur within the site. Transportation Research Board (TRB) National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, 2011. The daily credit is assumed to be 75% of peak hour credits taken.

[d] The transit, walk, and bike credit is based on the development's proximity to the Duarte Gold Line Station and Duarte's Central Business District.

[e] The pass-by credit is based on *Trip Generation Handbook: An ITE Recommended Practice* , 2003.

[f] ITE Office trip generation equations used rather than linear trip generation rate:
Daily: Ln(T) = 0.97 Ln(A) + 2.50, where T = trips, A = area in ksf (Suburban/Urban equation used)
AM Peak Hour: T = 0.94(A) + 26.49, where T = trips, A = area in ksf (Suburban/Urban equation used)
PM Peak Hour: Ln(T) = 0.95 Ln(A) + 0.36, where T = trips, A = area in ksf (Suburban/Urban equation used)

[g] ITE General Light Industrial trip generation equations used rather than linear trip generation rate:
Daily: T = 3.79*A + 57.96, where T = trips, A = area in ksf (Suburban/Urban equation used)
AM Peak Hour: Ln(T) = 0.74*Ln(A) + 0.39, where T = trips, A = area in ksf (Suburban/Urban equation used)
PM Peak Hour: Ln(T) = 0.69*Ln(A) + 0.43, where T = trips, A = area in ksf (Suburban/Urban equation used)



Study Intersections | Rail | Trip Distribution | Project Site Boundary | Metro Rail Station

- ⓘ # Study Intersections
- Rail
- #% Trip Distribution
- 🟥 Project Site Boundary
- Ⓜ Metro Rail Station

Figure 6

Trip Distribution

PROJECT TRAFFIC ASSIGNMENT

The traffic to be generated by the Project was assigned to the street network using the distribution pattern shown in Figure 6. Appendix C shows assignment of the Project-generated peak hour traffic volumes at the analyzed intersections during the AM and PM peak hours.

EXISTING PLUS PROJECT TRAFFIC PROJECTIONS

The estimated Project traffic was added to the existing traffic volumes to estimate Existing plus Project traffic volumes. Appendix C shows turning movement traffic volumes for the Existing plus Project scenario.

FUTURE TRAFFIC PROJECTIONS

To evaluate the potential impacts of the Project on future buildout (Year 2025) conditions, it was necessary to develop estimates of future traffic conditions in the area both without and with Project traffic. First, estimates of traffic growth were developed for the study area to forecast future conditions without the Project. These forecasts included traffic increases as a result of both regional ambient traffic growth and traffic generated by specific developments in the vicinity of the Project, known as related projects. These projected traffic volumes, identified herein as the future conditions, represent the future study year conditions without the Project. The traffic generated by the Project was then estimated and assigned to the surrounding street system. The Project traffic was added to the future to form the Future plus Project traffic conditions, which were analyzed to determine the incremental traffic impacts attributable to the Project itself.

The assumptions and analysis methodology used to develop each of the future year conditions discussed above are described in more detail in the following sections.

BACKGROUND OR AMBIENT GROWTH

Ambient growth for the study area was developed based on growth factors from the *Congestion Management Program for Los Angeles County* (CMP) (Metro, 2010). The State of California requires that a congestion management program be developed, adopted, and updated biennially for every county that includes an urbanized area and shall include every city and the county government within that county. Metro is designated as the Congestion Management Agency for Los Angeles County and is responsible for the implementation of the CMP. The CMP was approved in October 2010 and serves as a resource for future growth factors within the 21 Regional Statistical Areas (RSA) of Los Angeles County. The growth rate factors for the RSA of Duarte was used to determine yearly growth rates of the future traffic. A growth rate of 0.46% per year for the Duarte RSA was used for the development of the future year scenario, equaling a total growth of 3.2% between 2018 and 2025.

RELATED PROJECTS

Future traffic forecasts include the effects of specific projects, called related projects, expected to be implemented in the vicinity of the proposed Project site prior to the buildout date of the proposed Project. The list of related projects was prepared based on data from the City of Duarte and surrounding cities. A total of 10 cumulative projects were identified in the study area; these projects are listed in Table 7 and illustrated in Figure 7.

Trip Generation

Trip generation estimates for the related projects were calculated using a combination of previous study findings, publicly available environmental documentation, and the trip generation rates contained in *Trip Generation, 10th Edition* (Institute of Transportation Engineers [ITE], 2017). Table 7 presents the resulting trip generation estimates for these related projects. These projections are conservative in that they do not, in every case, account for either the existing uses to be removed or the possible use of non-motorized travel modes (transit, walking, etc.).

Trip Distribution

The geographic distribution of the traffic generated by the related projects is dependent on several factors. These factors include the type and density of the proposed land uses, the geographic distribution of population from which employees and potential patrons of proposed commercial developments may be drawn, the locations of employment and commercial centers to which residents of residential projects may be drawn, and the location of the projects in relation to the surrounding street system.

Traffic Assignment

Using the estimated trip generation and trip distribution patterns described above, traffic generated by the related projects was assigned to the street network.

TABLE 7
DUARTE STATION SPECIFIC PLAN
RELATED PROJECTS

					Estimated Trip Generation						
No.	Project Location[a]	Land Use	Size		Daily	AM Peak Hour Trips			PM Peak Hour Trips		
					Trips	In	Out	Total	In	Out	Total
1	1634 Third St. and 1101 Oak Ave.	Apartments	18	units	138	2	7	9	7	4	11
		Townhomes	2	units							
		Third Street Park (Existing)	-15.681	ksf							
2	1122 Huntington Drive	Fast Food Restaurant with drive-thru	5.175	ksf	636	28	26	54	36	33	69
		Fast Food Restaurant with drive-thru (Existing)	-3.825	ksf							
3	2632 Royal Oaks Drive [b][c]	Religious Institution	3.683	ksf	26	1	0	1	1	1	2
4	946-962 Huntington Drive	Townhomes	25	units	236	5	14	19	16	9	25
5	1405-37 Huntington Drive	Mid-Rise Apartments	161	units	1,087	63	45	108	53	39	92
		Commercial	3.5	ksf							
		Live/Work Space[d]	2.1	ksf							
6	1200 Huntington Drive	Apartments	800	du	3,150	155	160	315	538	378	916
		Commercial	703	ksf							
		Hotel	450	rooms							
7	City of Hope Specific Plan [e]	Hospital	2,945	people	4,753	448	66	514	74	388	462
8	1193 Huntington Drive[f]	Gym	15.862	ksf	547	11	10	21	31	24	55
9	1525 Huntington Drive	Restaurant	6.702	ksf	2,112	9	5	14	52	43	95
10	928 Huntington Drive	Apartments	22	units	161	2	8	10	8	0	8
				Total	12,846	724	341	1,065	816	919	1,735

Note:

ksf = one thousand square feet

A listing of proposed development projects were requested from the City of Duarte and surrounding municipalities in December 2018.

[a] Trip generation estimates based on rates found from *Trip Generation* , 10th Edition, Institute of Transportation Engineers, 2017.

[b] Square footage of the project site estimated based on project aerial view through google imagery.

[c] ITE trip generation rates for church used for meditation temple.

[d] ITE trip generation rates for commercial used for live/work space.

[e] Trip Generation Estimates provided in Traffic Impact Analysis City of Hope, April 2017

[f] Daily ITE rate was not available. Daily rate was estimated by multiplying PM peak hour rate by 10.

Figure 7

Related Projects

FUTURE BASE TRAFFIC VOLUMES

Appendix C illustrates the future year 2025 weekday AM and PM peak hour traffic volumes for the analyzed intersections. The future traffic conditions represent an estimate of future conditions without the Project.

FUTURE PLUS PROJECT TRAFFIC PROJECTIONS

The Project traffic volumes were added to the year 2025 future traffic projections, resulting in Future plus Project AM and PM peak hour traffic volumes. Illustrated in Appendix C, the Future plus Project scenario presents future traffic conditions with the completion of the proposed Project.

4. INTERSECTION TRAFFIC IMPACT ANALYSIS

The traffic impact analysis compares the projected LOS at each study intersection under the Existing plus Project conditions and under the Future and Future plus Project conditions to estimate the incremental increase in the V/C ratio or delay caused by the Project. This provides the information needed to assess the potential impact of the Project using significance criteria established by the City of Duarte.

CRITERIA FOR DETERMINATION OF SIGNIFICANT TRAFFIC IMPACT

The 18 study intersections are located within the City of Duarte. Significance criteria established by the City of Duarte was used to assess the potential for significant Project impacts at the study intersections.

Signalized Intersections

The following thresholds of significance for the incremental increase in the V/C ratio was used to assess significant transportation impacts at the signalized intersections located fully or partially within the City of Duarte. The significance of the Project's incremental increase in the V/C ratio is dependent upon the underlying LOS value for that specific peak hour based on the following thresholds:

LOS	Final V/C Ratio	Project Related Increase in V/C
E or F	> 0.901	equal to or greater than 0.020

Unsignalized Intersections

The following factors were used to assess significant transportation impacts at the unsignalized intersections in the City of Duarte. The results represent the HCM unsignalized LOS:

- The intersection is projected to decline to LOS E or F from LOS D or better with the addition of traffic volumes associated with the proposed Project; and
- The intersection meets signal warrants either caused by Project volumes, or Project volumes are added at an intersection that meets signal warrants in the baseline scenario(s).

Signal warrants are volume-based thresholds to determine whether a signal would be recommended, as determined in the *California Manual on Uniform Traffic Control Devices*, also known as MUTCD 2014 (Caltrans, 2014). The peak hour signal warrant test was used for the analysis. The warrant for a traffic signal is met if a plotted point representing the vehicles per hour on the major street (for both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for one hour lies above the applicable curve in Figure 4C-3 in MUTCD 2014 for the combination of approach lanes. If the combined volume of the major approaches and the corresponding conflicting volumes are greater than the threshold determined by the intersection configuration, then a traffic signal could be warranted.

EXISTING PLUS PROJECT IMPACT ANALYSIS

EXISTING PLUS PROJECT TRAFFIC LEVEL OF SERVICE

Existing plus Project traffic volumes, presented in Appendix C, were analyzed to determine the projected V/C ratio or delay, and LOS for each study intersection. Table 8A and Table 8B summarize the Existing plus Project LOS for signalized and unsignalized study intersections. The following three signalized study intersections analyzed operate at LOS E or worse during one or both peak hours under this scenario:

2. Mountain Avenue & Evergreen Avenue (PM peak hour)
9. Buena Vista Street & Duarte Road (PM peak hour)
18. I-605/Mount Olive Drive & Huntington Drive (AM/PM peak hour)

The following three unsignalized study intersections analyzed operate at LOS E or worse during one or both peak hours under this scenario:

10. I-210 Westbound off-ramp & Central Avenue (AM/PM peak hour)
11. Village Road & Duarte Road (AM/PM peak hour)
16. Highland Avenue & Evergreen Street (PM peak hour)

EXISTING PLUS PROJECT INTERSECTION IMPACTS

As presented in Table 8A and Table 8B, after applying the aforementioned significant impact criteria, it was determined that the Project would significantly impact traffic at the following signalized study intersection under the Existing plus Project scenario:

9. Buena Vista Street & Duarte Road (PM peak hour)

The Project would significantly impact traffic at the following two unsignalized study intersections under the Existing plus Project scenario:

10. I-210 Westbound off-ramp & Central Avenue (AM peak hour)
11. Village Road & Duarte Road (PM peak hour)

TABLE 8A
DUARTE STATION SPECIFIC PLAN
EXISTING YEAR (2018) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS
SIGNALIZED STUDY INTERSECTIONS

NO.	INTERSECTION	PEAK HOUR	EXISTING (2018)		EXISTING + PROJECT		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS		
1	Mountain Ave & Central Ave	AM	0.771	C	0.772	C	0.001	No
		PM	0.761	C	0.765	C	0.004	No
2	Mountain Ave & Evergreen Ave	AM	0.652	B	0.656	B	0.004	No
		PM	0.959	**E**	0.967	**E**	0.008	No
3	Mountain Ave & Duarte Rd	AM	0.600	A	0.614	B	0.014	No
[a]		PM	0.678	B	0.673	B	-0.005	No
4	Buena Vista St & Huntington Dr	AM	0.691	B	0.695	B	0.004	No
		PM	0.787	C	0.794	C	0.007	No
5	Buena Vista St & Central Ave	AM	0.556	A	0.578	A	0.022	No
		PM	0.613	B	0.629	B	0.016	No
6	Buena Vista St & I-210 WB On-ramp	AM	0.390	A	0.412	A	0.022	No
		PM	0.524	A	0.539	A	0.015	No
7	Buena Vista St & Evergreen St/I-210 EB On-ramp	AM	0.597	A	0.623	B	0.026	No
		PM	0.595	A	0.607	B	0.012	No
9	Buena Vista St & Duarte Rd	AM	0.808	D	0.838	D	0.030	No
		PM	0.920	**E**	0.967	**E**	0.047	**Yes**
13	Hope Dr & Duarte Rd	AM	0.330	A	0.343	A	0.013	No
		PM	0.415	A	0.449	A	0.034	No
14	Highland Ave & Huntington Dr	AM	0.552	A	0.584	A	0.032	No
		PM	0.821	D	0.893	D	0.072	No
15	Highland Ave & Central Ave	AM	0.565	A	0.599	A	0.034	No
		PM	0.763	C	0.783	C	0.020	No
17	Highland Ave & Business Center Dr	AM	0.346	A	0.439	A	0.093	No
		PM	0.433	A	0.487	A	0.054	No
18	I-605/Mt Olive Dr & Huntington Dr	AM	0.891	D	0.901	E	0.010	No
		PM	1.096	**F**	1.115	**F**	0.019	No

Notes:

[a] In ICU Methodology, the southbound left and westbound right overlap are related. For intersection #3, westbound right is the critical move in the plus project scenario. Increasing southbound left turning vehicles increases the capacity for westbound right turning vehicles, decreasing the overall V/C for this intersection even with the addition of project related trips.

TABLE 8B
DUARTE STATION SPECIFIC PLAN
EXISTING YEAR (2018) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS
UNSIGNALIZED STUDY INTERSECTIONS

NO.	**INTERSECTION**	**PEAK HOUR**	**EXISTING**		**EXISTING + PROJECT**		**DELAY INCREASE**	**SIGNIFICANT IMPACT?**
			Delay (s)	**LOS**	**Delay (s)**	**LOS**		
8	Buena Vista St & 3 Ranch Rd	AM	18.9	C	23.4	C	4.5	No
		PM	22.5	C	28.4	D	5.9	No
10	I-210 WB Off-ramp & Central Ave	AM	94.4	**F**	112.7	**F**	18.3	**Yes**
		PM	94.9	**F**	101.6	**F**	6.7	No
11	Village Rd & Duarte Rd	AM	49.1	**E**	63.2	**F**	14.1	No
		PM	44.3	**E**	85.8	**F**	41.5	**Yes**
12	Duncannon Ave & Evergreen St	AM	7.8	A	7.9	A	0.1	No
		PM	7.5	A	7.7	A	0.2	No
16	Highland Ave & Evergreen St	AM	24.3	C	31.8	D	7.5	No
		PM	22.0	C	36.9	**E**	14.9	No

Notes:

Worst approach delay reported for Two-Way Stop Controlled intersections.

FUTURE PLUS PROJECT IMPACT ANALYSIS

FUTURE TRAFFIC CONDITIONS

The year 2025 future peak hour traffic volumes were analyzed to determine the projected V/C ratio or delay, and LOS for each study intersection. Table 9A and Table 9B summarize the Future plus Project LOS for signalized and unsignalized intersections respectively. The following five signalized study intersections analyzed operate at LOS E or worse during one or both peak hours under this scenario:

1. Mountain Avenue & Central Avenue (PM peak hour)
2. Mountain Avenue & Evergreen Avenue (PM peak hour)
9. Buena Vista Street & Duarte Road (AM/PM peak hour)
14. Highland Avenue & Huntington Drive (PM peak hour)
18. I-605/Mount Olive Drive & Huntington Drive (AM/PM peak hour)

The following three unsignalized study intersections analyzed operate at LOS E or worse during one or both peak hours under this scenario:

8. Buena Vista Street & 3 Ranch Road (PM peak hour)
10. I-210 Westbound off-ramp & Central Avenue (AM/PM peak hour)
11. Village Road & Duarte Road (AM/PM peak hour)

FUTURE PLUS PROJECT TRAFFIC CONDITIONS

The resulting Future plus Project peak hour traffic volumes, illustrated in Appendix C, were analyzed to determine the projected future operating conditions with the addition of the Project traffic. The results of the Future plus Project analysis are presented in Table 9A and Table 9B. The following five signalized intersections are projected to operate at LOS E or worse during one or both of the peak hours with the addition of Project traffic:

1. Mountain Avenue & Central Avenue (PM peak hour)
2. Mountain Avenue & Evergreen Avenue (PM peak hour)
9. Buena Vista Street & Duarte Road (AM/PM peak hour)
14. Highland Avenue & Huntington Drive (PM peak hour)

18. I-605/Mount Olive Drive & Huntington Drive (AM/PM peak hour)

The following four unsignalized study intersections analyzed operate at LOS E or worse during one or both peak hours under this scenario:

8. Buena Vista Street & 3 Ranch Road (AM/PM peak hour)
10. I-210 Westbound off-ramp & Central Avenue (AM/PM peak hour)
11. Village Road & Duarte Road (AM/PM peak hour)
16. Highland Avenue & Evergreen Street (AM/PM peak hour)

FUTURE PLUS PROJECT INTERSECTION IMPACTS

As presented in Table 9A, after applying the aforementioned significant impact criteria, it was determined that the Project would significantly impact traffic at the following two signalized study intersections under the Future plus Project scenario:

9. Buena Vista Street & Duarte Road (AM/PM peak hour)
14. Highland Avenue & Huntington Drive (PM peak hour)

As presented in Table 9B, after applying the aforementioned significant impact criteria, it was determined that the Project would significantly impact traffic at the following two unsignalized study intersections under the Future plus Project scenario:

10. I-210 Westbound off-ramp & Central Avenue (AM/PM peak hour)
11. Village Road & Duarte Road (PM peak hour)

TABLE 9A
DUARTE STATION SPECIFIC PLAN
FUTURE YEAR (2025) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS
SIGNALIZED STUDY INTERSECTIONS

NO.	INTERSECTION	PEAK HOUR	FUTURE (2025)		FUTURE + PROJECT		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS		
1	Mountain Ave & Central Ave	AM	0.843	D	0.845	D	0.002	No
		PM	0.950	**E**	0.955	**E**	0.005	No
2	Mountain Ave & Evergreen Ave	AM	0.720	C	0.724	C	0.004	No
		PM	1.069	**F**	1.078	**F**	0.009	No
3	Mountain Ave & Duarte Rd	AM	0.620	B	0.634	B	0.014	No
[a]		PM	0.710	C	0.705	C	-0.005	No
4	Buena Vista St & Huntington Dr	AM	0.740	C	0.745	C	0.005	No
		PM	0.884	D	0.888	D	0.004	No
5	Buena Vista St & Central Ave	AM	0.628	B	0.650	B	0.022	No
		PM	0.669	B	0.684	B	0.015	No
6	Buena Vista St & I-210 WB On-ramp	AM	0.459	A	0.480	A	0.021	No
		PM	0.626	B	0.639	B	0.013	No
7	Buena Vista St & Evergreen St/I-210 EB On-ramp	AM	0.656	B	0.689	B	0.033	No
		PM	0.690	B	0.702	C	0.012	No
9	Buena Vista St & Duarte Rd	AM	1.022	**F**	1.052	**F**	0.030	**Yes**
		PM	1.175	**F**	1.222	**F**	0.047	**Yes**
13	Hope Dr & Duarte Rd	AM	0.397	A	0.409	A	0.012	No
		PM	0.490	A	0.525	A	0.035	No
14	Highland Ave & Huntington Dr	AM	0.612	B	0.643	B	0.031	No
		PM	0.901	**E**	0.974	**E**	0.073	**Yes**
15	Highland Ave & Central Ave	AM	0.598	A	0.632	B	0.034	No
		PM	0.789	C	0.808	D	0.019	No
17	Highland Ave & Business Center Dr	AM	0.375	A	0.468	A	0.093	No
		PM	0.458	A	0.512	A	0.054	No
18	I-605/Mt Olive Dr & Huntington Dr	AM	0.957	**E**	0.968	**E**	0.011	No
		PM	1.171	**F**	1.190	**F**	0.019	No

Notes:

[a] In ICU Methodology, the southbound left and westbound right overlap are related. For intersection #3, westbound right is the critical move in the plus project scenario. Increasing southbound left turning vehicles increases the capacity for westbound right turning vehicles, decreasing the overall V/C for this intersection even with the addition of project related trips.

TABLE 9B
DUARTE STATION SPECIFIC PLAN
FUTURE YEAR (2025) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS
UNSIGNALIZED STUDY INTERSECTIONS

NO.	INTERSECTION	PEAK HOUR	FUTURE (2025)		FUTURE + PROJECT		DELAY INCREASE	SIGNIFICANT IMPACT?
			Delay (s)	LOS	Delay (s)	LOS		
8	Buena Vista St & 3 Ranch Rd	AM	26.9	D	37.5	**E**	10.6	No
		PM	42.7	**E**	63.4	**F**	20.7	No
10	I-210 WB Off-ramp & Central Ave	AM	201.8	**F**	228.3	**F**	26.5	**Yes**
		PM	159.0	**F**	168.0	**F**	9.0	**Yes**
11	Village Rd & Duarte Rd	AM	305.9	**F**	406.8	**F**	100.9	No
		PM	238.3	**F**	367.2	**F**	128.9	**Yes**
12	Duncannon Ave & Evergreen St	AM	7.8	A	7.9	A	0.1	No
		PM	7.5	A	7.7	A	0.2	No
16	Highland Ave & Evergreen St	AM	30.7	D	42.7	**E**	12.0	No
		PM	25.0	C	45.1	**E**	20.1	No

Notes:

Worst approach delay reported for Two-Way Stop Controlled intersections.

SIGNAL WARRANT ANALYSIS

Traffic volumes and lane configurations, as presented in Appendices B and C, were used to prepare signal warrant analyses at the unsignalized intersections under Existing, Existing plus Project, Future, and Future plus Project conditions. The warrant analyses were conducted in accordance with the procedures described in Chapter 4C of the MUTCD 2014. The warrant for a traffic signal is met if a plotted point representing the vehicles per hour on the major street (for both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for one hour lies above the applicable curve in Figure 4C-3 in the MUTCD 2014 for the combination of approach lanes. If the combined volume of the major approaches and the corresponding conflicting volumes are greater than the threshold determined by the intersection configuration, then a traffic signal could be warranted.

As presented in Table 10, the following two intersections meet the signal warrant thresholds under the AM and/or PM peak hours for one of the above conditions:[1]

10. I-210 Westbound off-ramp & Central Avenue (Existing, Existing plus Project, Future, and Future plus Project conditions)
11. Village Road & Duarte Road (Existing, Existing plus Project, Future, and Future plus Project conditions)

Signal warrant worksheets are included in Appendix E.

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[1] This analysis is intended to examine the general correlation between the planned level of future development and the need to install new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration Manual on Uniform Traffic Control Devices and associated State guidelines. This analysis should not serve as the only basis for deciding whether and when to install a signal. To reach such a decision, the full set of warrants should be investigated based on field-measured, rather than forecast, traffic data and a thorough study of traffic and roadway conditions by an experienced engineer. Furthermore, the decision to install a signal should not be based solely upon the warrants, since the installation of signals can lead to certain types of collisions. The responsible state or local agency should undertake regular monitoring of actual traffic conditions and accident data, and timely re-evaluation of the full set of warrants in order to prioritize and program intersections for signalization.

TABLE 10
DUARTE STATION SPECIFIC PLAN
SIGNAL WARRANT ANALYSIS

NO.	INTERSECTION	PEAK HOUR	EXISTING	EXISTING PLUS PROJECT	FUTURE BASE	FUTURE PLUS PROJECT
8	Buena Vista St & 3 Ranch Rd	AM	NO	NO	NO	NO
		PM	NO	NO	NO	NO
10	I-210 WB Off-ramp & Central Ave	AM	**YES**	**YES**	**YES**	**YES**
		PM	NO	**YES**	**YES**	**YES**
11	Village Rd & Duarte Rd	AM	NO	NO	NO	**YES**
		PM	**YES**	**YES**	**YES**	**YES**
12	Duncannon Ave & Evergreen St	AM	NO	NO	NO	NO
		PM	NO	NO	NO	NO
16	Highland Ave & Evergreen St	AM	NO	NO	NO	NO
		PM	NO	NO	NO	NO

Notes:

Average vehicular delay reported for worst case approach for unsignalized intersections, that is Two-Way Stop Controlled and Un-controlled intersections.

MITIGATION MEASURES

This section describes the proposed transportation mitigation program for the Project and evaluates effectiveness of the program in mitigating the significant Project impacts described in the previous section. The mitigation program has been developed in discussions with City of Duarte staff, which has approved the approaches, analysis methods, and assumptions used to complete this analysis.

MITIGATION PROGRAM ELEMENTS

The mitigation program for the Project includes specific intersection improvements, including physical mitigations and signal phasing modifications.

PHYSICAL IMPROVEMENTS DETERMINED TO BE FEASIBLE

The following details the measures developed within the existing roadway to mitigate significant Project impacts. To the extent these mitigation measures are not adopted, impacts would remain significant and unavoidable.

10. I-210 Westbound off-ramp & Central Avenue

This intersection is recommended for signalization as a mitigation. The intersection is operating at an LOS F in the AM peak hour and LOS F in the PM peak hour under existing conditions. The intersection meets the peak hour signal warrant. The measure would mitigate the significant Project impact under the Existing plus Project and the Future plus Project conditions. The City of Hope Traffic Study has also identified the signalization of this intersection as a project mitigation.

11. Village Road & Duarte Road

This intersection is recommended for signalization as a mitigation. The intersection is created by a public road and private drive and is operating at an LOS E in the AM peak hour and LOS E in the PM peak hour under existing conditions. The intersection meets the peak hour signal warrant. The measure would mitigate the significant Project impact under the Existing plus Project and Future plus Project conditions. The City of Hope Traffic Study has also identified the signalization of this intersection as a project mitigation.

14. Highland Avenue & Huntington Drive

A mitigation measure was analyzed involving a modification to the northbound approach and southbound approach signal on Highland Avenue by adding an overlap phase for both right-turn approaches. This mitigation will require a modification to the lane geometry through the striping of a northbound and southbound right-turn lane. The mitigation would reduce the intersection impact to a less-than-significant level under Future plus Project conditions.

MITIGATION MEASURES EVALUATED BUT NOT RECOMMENDED

Provided below is a discussion of physical measures that were explored, but due to physical constraints or potential secondary impacts, the identified mitigation measure was determined to be infeasible. However, this summary provides the opportunity for further public input on potential improvements that were explored:

9. *Buena Vista Street & Duarte Road*

A mitigation measure was analyzed involving a modification to the northbound approach on Buena Vista Street to add a right-turn lane. This mitigation would require the widening of the northbound leg to accommodate the additional lane. The mitigation would reduce the intersection impact to a less-than-significant level. The mitigation is not recommended, due to the need to modify the of the right-of-way, which contains the Metro Gold Line tracks to the north and private property to the south.

SUMMARY OF SIGNIFICANT IMPACTS AFTER PROPOSED MITIGATION MEASURES

Table 11 and Table 12 show LOS and significant impact analysis results after the implementation of the mitigation measures under existing and future conditions described in the previous section. As presented in Tables 8A-9B, the Project was determined to significantly impact traffic at three intersections under Existing plus Project conditions and four intersections under Future plus Project conditions prior to mitigation.

After applying the aforementioned mitigation measures, significant and unavoidable traffic impacts are projected to remain at the one following intersection:

9. Buena Vista Street & Duarte Road

TABLE 11
DUARTE STATION SPECIFIC PLAN
EXISTING YEAR (2018) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS - MITIGATIONS

NO.	INTERSECTION	PEAK HOUR	EXISTING (2018)		EXISTING + PROJECT		EXISTING + PROJECT (MITIGATION)		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS	V/C	LOS		
9	Buena Vista St & Duarte Rd	AM	0.808	D	0.838	D	0.838	D	0.030	No
		PM	0.920	E	0.967	E	0.967	E	0.047	**Yes**
10	I-210 WB Off-ramp & Central Ave	AM	0.616	B	--	--	0.651	B	0.035	No
		PM	0.567	A	--	--	0.585	A	0.018	No
11	Village Rd & Duarte Rd	AM	0.484	A	--	--	0.494	A	0.010	No
		PM	0.438	A	--	--	0.470	A	0.032	No

TABLE 12
DUARTE STATION SPECIFIC PLAN
FUTURE YEAR (2025) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS - MITIGATIONS

NO.	INTERSECTION	PEAK HOUR	FUTURE (2025)		FUTURE + PROJECT		FUTURE + PROJECT (MITIGATION)		V/C INCREASE	SIGNIFICANT IMPACT?
			V/C	LOS	V/C	LOS	V/C	LOS		
9	Buena Vista St & Duarte Rd	AM	1.022	F	1.052	F	1.052	F	0.030	**Yes**
		PM	1.175	F	1.222	F	1.222	F	0.047	**Yes**
10	I-210 WB Off-ramp & Central Ave	AM	0.659	B	--	--	0.686	B	0.027	No
		PM	0.600	A	--	--	0.618	B	0.018	No
11	Village Rd & Duarte Rd	AM	0.610	B	--	--	0.620	B	0.010	No
		PM	0.545	A	--	--	0.577	A	0.032	No
14	Highland Ave & Huntington Dr	AM	0.612	B	0.643	B	0.643	B	0.031	No
		PM	0.901	E	0.974	E	0.891	D	-0.010	No

5. REGIONAL TRANSPORTATION SYSTEM IMPACT ANALYSIS

This section presents an analysis of potential impacts on the regional transportation system. This analysis was conducted in accordance with the procedures outlined in *Congestion Management Program for Los Angeles County* (CMP) (Metro, 2010). The CMP requires that, when an environmental impact report is prepared for a project, traffic and public transit impact analyses be conducted for select regional facilities based on the quantity of project traffic expected to use those facilities.

CMP REGIONAL TRAFFIC IMPACT ANALYSIS

The CMP guidelines require that the first issue to be addressed is the determination of the geographic scope of the Study Area. The criteria for determining the study area for CMP arterial monitoring intersections and for freeway monitoring locations are:

- All CMP arterial monitoring intersections where the proposed Project will add 50 or more trips during either the AM or PM peak hours of adjacent street traffic.
- All CMP mainline freeway monitoring locations where the proposed Project will add 150 or more trips, in either direction, during either the AM or PM peak hours.

SIGNIFICANT TRAFFIC IMPACT CRITERIA

The CMP traffic impact analysis guidelines establish that a significant project impact occurs when the following threshold is exceeded:

- The proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C ≥ 0.02), causing LOS F (V/C > 1.00)

If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C ≥ 0.02).

ARTERIAL MONITORING STATIONS

The closest CMP arterial monitoring station, the intersection of Azusa Avenue & Foothill Boulevard, is approximately 4.3 miles from the Project site. The Project is not expected to add 50 or more vehicle trips during the AM or PM peak hours in the eastbound and westbound directions at any of the study intersections in the northeastern boundary of the Study Area, much closer to the Project site. Therefore, the

Project would not add more than 50 trips to the intersection of Azusa Avenue & Foothill Boulevard farther east, and no further arterial review using CMP criteria is required.

FREEWAYS

The CMP mainline freeway monitoring stations closest to the Project site are I-210 at Highland Avenue and I-605 at Rivergrade Road. According to the trip generation estimates presented in Table 6 and trip distribution estimates presented in Figure 6, the Project is projected to result in an increase of fewer than 150 trips in each direction for both the AM and PM peak hours at both of these locations. No further analysis of the freeway segments is required for CMP purposes.

CMP REGIONAL PUBLIC TRANSIT IMPACT ANALYSIS

Appendix C-8 of the 2010 CMP provides a methodology for estimating the number of transit trips expected to result from a proposed project based on the projected number of vehicle trips. This methodology assumes an average vehicle ridership (AVR) factor of 1.4 in order to estimate the number of person trips to and from a project and then provides guidance regarding the percentage of person trips assigned to public transit depending on the type of use (commercial/other versus residential) and the proximity to transit services. Appendix C-8 of the 2010 CMP recommends summarizing the fixed-route local bus services within ¼-mile of the Project site and express bus routes and rail service within two miles of the Project site.

Within ¼-mile of the Project site, Metro operates one local bus line and one light-rail line; Foothill transit operates two local lines; and Duarte Transit operates two local routes. There is no additional high-quality transit services within two miles of the Project site.

As part of the trip generation estimates presented in Table 6, a transit credit of 15% was taken for the Project. This credit accounts for trips made to and from the Project site using transit. The 15% transit credit is estimated to reduce Project-generated trips by 87 vehicle trips during the AM peak hour and 101 during the PM peak hour on weekdays. Applying the AVR factor of 1.4, the Project would generate an estimated 122 transit riders in the AM peak hour and an estimated 142 transit riders in the PM peak hour.

The Project location is well served by numerous established local and regional transit routes; therefore, Project-related transit impacts are not expected to be significant. The headway service for local routes is assumed to operate with 20 minutes during peak hours. The headway service for local routes are between 15 and 60 minutes during both peak periods, as seen in Table 2. Metro Gold Line operates with a 7-minute headway during peak periods. An AM and PM capacity was determined based on the AM and PM peak period headways and seating capacities of the various transit types. With a total estimated transit seating capacity of approximately 8,155 persons in the peak hour, the Project's estimated transit riders of 122 in the AM peak hour and 142 in the PM peak hour would utilize approximately 1.5% of available transit capacity during the AM peak hour and 1.7% during the PM peak hour. This is not considered a significant public transit impact.

6. VEHICLES MILES TRAVELED ANALYSIS

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that will fundamentally change transportation impact analysis conducted as part of California Environmental Quality Act (CEQA) compliance. The Governor's Office of Planning and Research (OPR) was charged with developing new guidelines for evaluating transportation impacts under CEQA using methods that no longer focus on measuring automobile delay and level of service (LOS). This change at the state level recognizes the unintended consequences of using LOS as an impact metric, which results in understating potential transportation impacts in greenfield areas and discouraging more sustainable infill projects and alternative transportation projects. SB 743 directed agencies to create new guidelines that develop a transportation performance metric promoting: the reduction of greenhouse gas emissions, the development of multimodal networks, and a more sustainable diversity of land uses.

OPR issued proposed updates to the CEQA guidelines in support of these goals in November 2017 and a supporting technical advisory in December 2018.[2] The updates establish vehicle miles traveled (VMT) as the primary metric for evaluating a project's environmental impacts on the transportation system. The changes to CEQA guidelines Section 15064.3 to implement SB 743 were certified by the State in December of 2018. Lead agencies have until July 1, 2020 to implement these new requirements. *As the City of Duarte has not yet adopted new traffic impact study guidelines including the VMT metric and significance in compliance with SB 743 guidelines, the analyses below were conducted for informational purposes only.*

AVERAGE TRIP LENGTH EVALUATION

To evaluate total VMT for the Project, the VMT analysis utilized trip distances as determined by the Southern California Association of Government's (SCAG) travel demand model. The vehicle trip length for the Duarte transportation analysis zone (TAZ) was obtained from the SCAG 2016 Regional Transportation Plan (RTP) Travel Demand Model.[3] The SCAG travel demand model identifies trip distances as Home-Based Work (HBW) and Home-Based Other (HBO), where trips have been produced by residential land uses and trips have been attracted by non-residential land uses. The other trip type, Non Home-Based (NHB), is produced and attracted by non-residential land uses. To determine the average trip length of the residential component of the Project, the average lengths of production trips in HBW and HBO were identified. To

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[2] State of California, Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018.

[3] The SCAG 2016 Regional Transportation Plan (RTP) was the most current RTP available from SCAG at the time of issuance of Notice of Preparation (NOP) and modeling prepared for the transportation analysis presented in this traffic study.

determine average trip length for the office component of the Project, average HBW trip distances from attraction trips were selected. The Duarte TAZ in the 2016 SCAG travel demand model identifies the average trip length for residential land uses as 15.8 miles for HBW trips and 8.1 miles for HBO trips, and the average trip length for office land uses for HBW trips as 17.7 miles.

TRIP GENERATION DETERMINATION

As seen in Table 6, the Project is expected to generate an estimated 6,289 net new daily residential trips and 767 net new daily worker trips. OPR advices that for residential projects, the focus of VMT calculations should be on Home-Based trips and for office projects the focus should be on Home-Based Work trips. These are the only trip types that need to be analyzed for VMT purposes.[4] NCHRP[5] guidelines estimate that of a Project's total trips, 15% of the residential trips are HBW and 50% of the residential trips are HBO. It estimates that 35% of the office trips are HBW. These factors were applied to the daily trip generation estimates in Table 6 to identify the number of residential HBW and HBO trips and office HBW trips. For residential land uses, the number of HBW trips was estimated at 943 trips and the number of HBO trips was estimated at 3,145 trips. For office land uses, the number of HBW trips was estimated at 268 trips. Since CEQA guidance does not require VMT analysis for commercial uses less than 50,000 square feet, daily trips produced by the retail and restaurant land uses have not been included in this analysis.

VMT ESTIMATE

To calculate the daily VMT, the trips for each land use were multiplied by the associated SCAG travel demand model trip distances. Based on the Project's estimated trip generation of 943 HBW residential trips and average resident HBW trip length of 15.8 miles and 3,145 HBO residential trips and average HBO trip length of 8.1 miles, the residential land use generates 40,374 daily VMT. Based on the Project's estimated trip generation of 268 HBW employee trips and average HBW employee trip length of 17.7 miles, the office land use generates 4,744 daily VMT.

SERVICE POPULATION DETERMINATION

To conduct a VMT per capita analysis, a service population for the residential and office land uses was determined. Service populations typically account for residents and employees of a project. Residential land

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[4] Governor's Office of Planning and Research. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Page 5.

[5] National Cooperative Highway Research Program. *Report 365: Travel Estimation Techniques for Urban Planning*

uses were converted to household population based on conversion rates derived from 2019 Department of Finance data. The average household size of dwelling units based on Department of Finance data is 3.03 people per unit, resulting in an estimated household population generated by the Project of 4,242 residents. Office land uses were converted to employee population based on conversion rates derived the 2016 SCAG Regional Transportation Plan/Sustainable Communities Strategy. The above data source suggests one employee per 280 square feet, resulting in an estimated employee population generated by the Project of 357 employees.

VMT PER CAPITA ESTIMATE

To calculate the VMT per capita at the Project, the daily VMT was divided by the Project's population. For the residential land uses, 40,374 daily VMT was divided by the residential population of 4,242 to result in an estimated 9.5 VMT per resident. For the office land uses, 4,744 daily VMT was divided by an employee population of 357 to result in an estimated 13.3 VMT per employee. Table 13 below summaries the VMT analysis.

TABLE 13
DUARTE STATION SPECIFIC PLAN
VEHICLE MILES TRAVELED (VMT) ANALYSIS

	RESIDENTIAL		OFFICE
	HBW	HBO	HBW
Trip Length by Land Use (miles) [a]	15.8	8.1	17.7
Project Trip Generation [b]	943	3,145	268
Daily VMT [c]	40,374		4,744
Service Population [d]	4,242		357
VMT per Capita/Employee	9.5		13.3

Notes:

[a] The Southern California Association of Governments (SCAG) Travel Demand Forecasting Model provides the ability to evaluate the transportation system, use performance indicators for land use and transportation alternatives, provide information on regional pass-through traffic versus locally generated trips, and graphically display these results. The model captures planned growth in the Project Area and is sensitive to emerging land use trends through improved sensitivity to built environment variables. The model forecasts AM and PM peak period and daily vehicle and transit flows on the transportation network in the City and calculates trip origins and destinations for those vehicle flows, ultimately providing the trip lengths utilized here.

[b] NCHRP estimates 15% of total residential trips to be HBW trip types and 50% of residential trips to be HBO trip types. NCHRP also estimates 35% of total office trips to be HBW trip types. These factors were applied to the daily trip generation estimated in Table 6 to identify the number of residential HBW and HBO trips and office HBW trips.

[c] Daily VMT for residential and office land uses is calculated using the residential and office trip generation explained in [b] and the average trip length calculated using the SCAG model for each land use.

[d] VMT per Capita for residential is calculated by converting the residential land use to household population based on conversion rates derived from 2019 Department of Finance data. The average household size of renter occupied units based on Department of Finance data is 3.03 people per dwelling unit. VMT per Capita for office is calculated by converting office land use to population based on conversion rates derived the 2016 SCAG Regional Transportation Plan/Sustainable Communities Strategy. The above data sources suggests one employee per 280 square feet.

7. FREEWAY ANALYSIS

This section presents an analysis of potential effects of the Project on freeway (Caltrans) facilities. This section summarizes the results of the analysis prepared consistent with Caltrans guidance. Two analyses were conducted, which included off-ramp queuing analysis at five off-ramps on the I-210 and I-605 freeways and freeway mainline freeway segment analysis for a series of mainline segments on I-210 and I-605 freeways.

OFF-RAMP QUEUING ANALYSIS

A freeway off-ramp queuing analysis was conducted at five freeway off-ramp locations to determine queuing conditions at the off-ramps as a result of traffic from the Project. Queue lengths were estimated using Synchro, a traffic analysis software package. Each intersection was configured according to its existing (and future, if applicable) arrival conditions, including signal timing and physical geometry. The focus of the queuing analysis is to specifically determine if there is adequate storage capacity at the off-ramps. An impact is considered significant if the off-ramp queue extends beyond 85% of the capacity of the ramp during the AM and PM peak hours.

The queueing analysis was conducted for the following off-ramps:

1. I-210 Westbound off-ramp/Central Avenue & Mountain Avenue
2. I-210 Eastbound off-ramp/Evergreen Street & Mountain Avenue
7. I-210 Eastbound off-ramp/Evergreen Street & Buena Vista Street
10. I-210 Westbound off-ramp & Central Avenue
18. I-605 ramps/Mount Olive Avenue & Huntington Avenue

Four scenarios were tested for the AM and PM weekday peak hours:

- Existing (Year 2018)
- Existing plus Project
- Future (Year 2025)
- Future plus Project

QUEUING ANALYSIS

Table 14 and Table 15 present a summary of the ramp queuing analysis for all project conditions. The 95th percentile queues were reported for the purposes of this analysis. The freeway ramps queues would not extend beyond 85% of the capacity of the ramp under any existing or future scenarios with the Project. **No significant impact at off-ramp locations is anticipated as a result of the Project.** Detailed queue calculations are provided in Appendix F.

TABLE 14
DUARTE STATION SPECIFC PLAN
EXISTING YEAR (2018) PEAK HOUR OFF-RAMP INTERSECTION QUEUES

Intersection Number	Ramp	Cross Street	Total Capacity (ft) [a]	85% Ramp Capacity (ft)	Ramp Turn Lanes at Intersection			Control	Existing (2018)				Queue Exceeds Storage?	Existing (2018) + Project				Queue Exceeds Storage?
									AM Queue		PM Queue			AM Queue		PM Queue		
					Lanes	Move	Length [a]		Lane (ft)	Max (ft)	Lane (ft)	Max (ft)		Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	
1	I-210 WB Off-ramp/Central Avenue	Mountain Avenue	3,860	3,281	3	left through through/right	2,360 920 580	Signal	232 #448 #448	#1128	194 106 106	406	No	232 #448 #448	#1128	194 109 109	412	No
2	I-210 EB Off-ramp/Evergreen Street	Mountain Avenue	4,560	3,876	4	left through through right	1,470 1,470 1,470 150	Signal	228 108 108 45	489	191 #538 #538 62	#1329	No	228 110 110 45	493	191 #551 #551 62	#1355	No
7	I-210 EB Off-ramp/Evergreen Street	Buena Vista Street	5,200	4,420	2	through/left through/right	2,600 2,600	Signal	109 109	218	184 184	368	No	109 109	218	194 194	388	No
10	I-210 WB Off-ramp	Central Avenue	1,450	1,233	2	left right	910 540	Stop	398 80	478	293 30	323	No	438 85	523	315 43	358	No
18	I-605 ramps/Mt Olive Avenue	Huntington Avenue	3,130	2,661	3	left through/left right	550 1,290 1,290	Signal	#655 #654 81	#1390	262 267 #382	#911	No	#675 #689 89	#1453	#351 #352 #382	#1085	No

[a] Storage length determined based on scaled distances from on-line aerial photographs.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after 2 cycles.

TABLE 15
DUARTE STATION SPECIFC PLAN
FUTURE YEAR (2025) PEAK HOUR OFF-RAMP INTERSECTION QUEUES

Intersection Number	Ramp	Cross Street	Total Capacity (ft) [a]	85% Ramp Capacity (ft)	Ramp Turn Lanes at Intersection			Control	Future (2025)				Queue Exceeds Storage?	Future (2025) + Project				Queue Exceeds Storage?
									AM Queue		PM Queue			AM Queue		PM Queue		
					Lanes	Move	Length [a]		Lane (ft)	Max (ft)	Lane (ft)	Max (ft)		Lane (ft)	Max (ft)	Lane (ft)	Max (ft)	
1	I-210 WB Off-ramp/Central Avenue	Mountain Avenue	3,860	3,281	3	left	2,360	Signal	240	#1250	201	609	No	240	#1250	201	613	No
						through	920		#505		204			#505		206		
						through/right	580		#505		204			#505		206		
2	I-210 EB Off-ramp/Evergreen Street	Mountain Avenue	4,560	3,876	4	left	1,470	Signal	257	526	258	#1451	No	257	530	258	#1476	No
						through	1,470		112		#565			114		#577		
						through	1,470		112		#565			114		#577		
						right	150		45		63			45		64		
7	I-210 EB Off-ramp/Evergreen Street	Buena Vista Street	5,200	4,420	2	through/left	2,600	Signal	170	340	209	418	No	175	350	220	440	No
						through/right	2,600		170		209			175		220		
10	I-210 WB Off-ramp	Central Avenue	1,450	1,233	2	left	910	Stop	693	788	413	446	No	488	591	440	488	No
						right	540		95		33			103		48		
18	I-605 ramps/Mt Olive Avenue	Huntington Avenue	3,130	2,661	3	left	550	Signal	#766	#1653	#375	#1188	No	#800	#1715	#465	#1360	No
						through/left	1,290		#777		#388			#800		#470		
						right	1,290		110		#425			115		#425		

[a] Storage length determined based on scaled distances from on-line aerial photographs.

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after 2 cycles.

MAINLINE FREEWAY SEGMENT ANALYSIS

Mainline freeway segment analyses were conducted using the HCM operational analysis methodology as implemented by the Highway Capacity Software (HCS) software package for the following four segments along the I-210 and I-605 in both directions:

- I-210 West of Mountain Avenue
- I-210 Between Buena Vista Street and Highland Avenue
- I-210 East of Mount Olive Drive
- I-605 South of Live Oak Avenue

Per the *Guide for the Preparation of Traffic Impact Studies,* or Caltrans TIS Guide (Caltrans, 2002), Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities; however, Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, the existing measure of effectiveness (MOE) should be maintained (Caltrans TIS Guide, page 1). This latter criterion does not allow for determination of effect if the segment is operating at LOS F under baseline conditions. For informational purposes, freeway segments operating at LOS F under base conditions were identified if the project traffic added to these segments is estimated to represent 2% or more of the total traffic on the segment.

EXISTING AND EXISTING PLUS PROJECT MAINLINE LEVEL OF SERVICE

Freeway mainline volume and speed data were obtained from Caltrans' Performance Measurement System (PeMS) archived traffic data for the AM and PM peak periods for Tuesdays, Wednesdays, and Thursdays in December 2018[6], and the data was averaged across the days. Existing and Existing plus Project conditions on the mainline segments are presented in Table 16. Detailed LOS calculations are provided in Appendix F.

Level of service was determined using the following definitions from the HCM as presented in Appendix C of the Caltrans TIS Guide (note that LOS F is defined as density exceeding 45 passenger cars per mile per lane and average speed below 52.2 miles per hour):

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[6] Specifically, between December 1-22, except when data was not available for those dates.

LOS DEFINITIONS FOR BASIC FREEWAY SEGMENTS @ 65 MILES/HOUR

Level of Service	Maximum Density (pc/mi/ln)	Minimum Speed (mph)
A	11	65.0
B	18	65.0
C	26	64.6
D	35	59.7
E	45	52.2

For both the Existing and Existing plus Project scenarios during the AM peak hour, I-210 west of Mountain Avenue in the westbound direction and I-605 south of Live Oak Avenue in the southbound direction operate at a congested LOS F. During the PM peak hour, the eastbound segments on I-210 operate at LOS F.

With the Project, all of the segments during the AM peak hour would continue to operate at the same LOS as under Existing conditions. The Project represents between 0.2% and 1.4% of the Existing plus Project traffic volumes on the segments depending on location and direction. **The Project is projected to have no change in the MOE during the AM peak hour under the Existing plus Project scenario.**

With the Project, none of the segments during the PM peak hour would operate at a worse LOS when compared to the Existing condition. The Project represents between 0.5% and 1.9% of the Existing plus Project traffic volumes on the segments depending on location and direction. **The Project is projected to have no change in the MOE during the PM peak hour under the Existing plus Project scenario.**

FUTURE AND FUTURE PLUS PROJECT MAINLINE LEVEL OF SERVICE

Per the Caltrans TIS Guide, future conditions analyzed in conjunction with a project entitlement process should be evaluated for the future year in which the project is anticipated to complete construction (Caltrans TIS Guide, page 3). Future volumes were thus projected for the future traffic conditions (Year 2025) taking into account projected changes in traffic over existing conditions from two primary sources: (1) ambient growth in the existing traffic volumes due to the effects of overall regional growth and development outside the study area, and (2) traffic generated by specific development projects in, or in the vicinity of, the study area. The methods used to account for these factors are described below:

- <u>Background or Ambient Growth</u> – Ambient growth for the study area was developed based on growth factors from the Congestion Management Program for Los Angeles County (CMP) (Metro, 2010). The State of California requires that a congestion management program be developed, adopted, and updated biennially for every county that includes an urbanized area and shall include every city and the county government within that county. Metro is designated as the Congestion

Management Agency for Los Angeles County and is responsible for the implementation of the CMP. The CMP was approved in October 2010 and serves as a resource for future growth factors within the 21 Regional Statistical Areas (RSA) of Los Angeles County. The growth rate factors for the RSA area of Duarte was used to determine yearly growth rates of the future traffic. Growth rates of 0.46% per year for the Duarte RSA was used for the development of the future year scenario.

- <u>Related Projects</u> – Future traffic forecasts include the effects of specific projects, called related projects, expected to be implemented in the vicinity of the proposed Project site prior to the buildout date of the proposed Project. The list of related projects was prepared based on data from the City of Duarte. A total of 10 cumulative projects were identified in the study area; these projects are listed in Table 7. Trip generation estimates for the related projects were calculated using a combination of previous study findings, publicly available environmental documentation, and trip generation rates contained in the Institute of Transportation Engineers' trip generation manual. Table 7 presents the trip generation estimates for these related projects. These projections are conservative in that they do not in every case account for either the existing uses to be removed or the possible use of non-motorized travel modes (transit, walking, etc.).

Table 17 presents the future freeway mainline segment analysis. For both the Future and Future plus Project scenarios, during the AM peak hour, I-210 west of Mountain in the westbound direction and I-605 south of Live Oak Avenue in the southbound direction operate at a congested LOS F. During the PM peak hour, the eastbound segments on I-210 operate at LOS F.

With the Project, all of the segments during the AM peak hour would continue to operate at the same LOS as under Future conditions. The Project represents between 0.2% and 1.4% of the Future plus Project traffic volumes on the segments depending on location and direction. **The Project is projected to have no change in the MOE during the AM peak hour under the Future plus Project scenario.**

With the Project, all of the segments during the PM peak hour would continue to operate at the same LOS as under Future conditions. The Project represents between 0.5% and 1.8% of the Future plus Project traffic volumes on the segments depending on location and direction. **The Project is projected to have no change in the MOE during the PM peak hour under the Future plus Project scenario.**

TABLE 16
EXISTING FREEWAY MAINLINE LEVEL OF SERVICE

AM Peak Hour											
			Existing			Project	Existing Plus Project			Project %	Project Change
Location	Fwy Segment Name	Dir	Volume	LOS	Density	Volume	Volume	LOS	Density	of Total	in MOE
1	I-210 w/o Mountain	EB	6,137	D	26.2	24	6,161	D	26.3	0.4%	No
		WB	4,831	F	-	70	4,901	F	-	1.4%	No
2	I-210 between Buena Vista and Highland	EB	4,974	C	20.9	48	5,022	C	21.1	1.0%	No
		WB	4,948	C	20.8	31	4,979	C	20.9	0.6%	No
3	I-210 e/o Mt Olive	EB	7,015	C	23.6	42	7,057	C	23.8	0.6%	No
		WB	6,648	C	22.3	14	6,662	C	22.4	0.2%	No
4	I-605 s/o Live Oak	NB	5,161	C	21.6	24	5,185	C	21.7	0.5%	No
		SB	6,065	F	-	70	6,135	F	-	1.1%	No

PM Peak Hour											
			Existing			Project	Existing Plus Project			Project %	Project Change
Location	Fwy Segment Name	Dir	Volume	LOS	Density	Volume	Volume	LOS	Density	of Total	in MOE
1	I-210 w/o Mountain	EB	3,751	F	-	74	3,825	F	-	1.9%	No
		WB	5,765	C	24.3	48	5,813	C	24.6	0.8%	No
2	I-210 between Buena Vista and Highland	EB	4,266	F	-	47	4,313	F	-	1.1%	No
		WB	4,616	C	19.4	56	4,672	C	19.6	1.2%	No
3	I-210 e/o Mt Olive	EB	5,586	F	-	29	5,615	F	-	0.5%	No
		WB	5,851	C	19.6	45	5,896	C	19.8	0.8%	No
4	I-605 s/o Live Oak	NB	4,854	C	20.4	74	4,928	C	20.7	1.5%	No
		SB	5,929	C	25.1	48	5,977	C	25.4	0.8%	No

Note :

Locations operating at an average speed < 52.2 mph are defined as LOS F by the Highway Capacity Manual per the Caltrans Guide for the Preparation of Traffic Impact Studies (Dec 2002).

Density is not provided at LOS F locations as density results are not refelective of operations at location.

TABLE 17
FUTURE FREEWAY MAINLINE LEVEL OF SERVICE

AM Peak Hour											
			Future			Project	Future Plus Project			Project %	Project Change
Location	Fwy Segment Name	Dir	Volume	LOS	Density	Volume	Volume	LOS	Density	of Total	in MOE
1	I-210 w/o Mountain	EB	6,489	D	28.0	24	6,513	D	28.2	0.4%	No
		WB	5,045	F	-	70	5,115	F	-	1.4%	No
2	I-210 between Buena Vista and Highland	EB	5,214	C	21.9	48	5,262	C	22.1	0.9%	No
		WB	5,256	C	22.1	31	5,287	C	22.2	0.6%	No
3	I-210 e/o Mt Olive	EB	7,298	C	24.7	42	7,340	C	24.8	0.6%	No
		WB	6,979	C	23.5	14	6,993	C	23.5	0.2%	No
4	I-605 s/o Live Oak	NB	5,521	C	23.2	24	5,545	C	23.3	0.4%	No
		SB	6,338	F	-	70	6,408	F	-	1.1%	No

PM Peak Hour											
			Future			Project	Future Plus Project			Project %	Project Change
Location	Fwy Segment Name	Dir	Volume	LOS	Density	Volume	Volume	LOS	Density	of Total	in MOE
1	I-210 w/o Mountain	EB	3,994	F	-	74	4,068	F	-	1.8%	No
		WB	6,126	D	26.1	48	6,174	D	26.4	0.8%	No
2	I-210 between Buena Vista and Highland	EB	4,623	F	-	47	4,670	F	-	1.0%	No
		WB	4,967	C	20.8	56	5,023	C	21.1	1.1%	No
3	I-210 e/o Mt Olive	EB	5,916	F	-	29	5,945	F	-	0.5%	No
		WB	6,175	C	20.7	45	6,220	C	20.9	0.7%	No
4	I-605 s/o Live Oak	NB	5,186	C	21.8	74	5,260	C	22.1	1.4%	No
		SB	6,351	D	27.3	48	6,399	D	27.5	0.8%	No

Note :

Locations operating at an average speed < 52.2 mph are defined as LOS F by the Highway Capacity Manual per the Caltrans Guide for the Preparation of Traffic Impact Studies (Dec 2002).

Density is not provided at LOS F locations as density results are not refelective of operations at location.

8. SUMMARY AND CONCLUSIONS

This study was undertaken to analyze the potential traffic impacts of the proposed Duarte Station Specific Plan in the City of Duarte. The following summarizes the results of this analysis:

- The Project involves the construction of up to 1,400 multi-family mid-rise residential dwelling units, 6,250 square feet of retail uses, 6,250 square feet of high turnover (sit-down) restaurant uses, and 100,000 square feet of office space.
- Vehicle access to the Project site will be provided off of Highland Avenue, Business Center Drive, and Evergreen Street.
- The study includes the analysis of 18 intersections, of which 13 intersections operate under signal control and the remaining five intersections are stop-controlled. The ICU methodology was used for signalized intersections and HCM methodology was used for unsignalized intersections.
- The Project is expected to generate a total estimated net external 6,209 weekday daily trips, including 374 trips (94 inbound/280 outbound) during the weekday AM peak hour and 486 trips (296 inbound/190 outbound) during the weekday PM peak hour.
- Compared to the Existing conditions, the Project is expected to have three significantly impacted intersections, and compared to the Future conditions, the Project is expected to have four significantly impacted intersections.
    - In Existing plus Project, the following three intersections are impacted:

      9. Buena Vista Street & Duarte Road
      10. I-210 Westbound off-ramp & Central Avenue
      11. Village Road & Duarte Road

    - In Future plus Project, the following four intersections are impacted:

      9. Buena Vista Street & Duarte Road
      10. I-210 Westbound off-ramp & Central Avenue
      11. Village Road & Duarte Road
      14. Highland Avenue & Huntington Drive

- All but one of the significantly impacted intersections would be mitigated under Existing plus Project conditions and Future plus Project conditions. The remaining significantly impacted intersection (#9. Buena Vista Street & Duarte Road) would not be mitigated because the infeasibility of modifying Buena Vista Street & Duarte Road.
- The Project is not expected to significantly impact regional arterial, freeway, or transit facilities under the CMP criteria.
- The Project is estimated to produce 9.5 vehicle miles traveled per resident and 13.3 vehicle miles traveled per employee.

- The Project is not estimated to create off-ramp queue lengths that exceed 85% of the capacity of the ramp. The Project is not projected to have a change in the MOE at any mainline location.
- Below is a summary of the significant impacts identified in the previous Duarte Station Specific Plan (2013) as compared to this report. Both studies identified four significant impacts. The prior study had two significant impacts remaining after proposed mitigations, while this study has one significant and unavoidable impact remaining.

Intersection	**Impacted in prior (2013 EIR) study?**	**Impacted in current study?**
Buena Vista St & Duarte Rd	Y*	Y
Highland Ave & Huntington Dr	N	Y*
Buena Vista St & 3 Ranch Rd	Y	N
I-210 WB Off-ramp & Central Ave	N/A	Y*
Village Rd & Duarte Rd	Y*	Y*
Highland Ave & Evergreen St	Y	N

* Indicates that the intersection was mitigated

REFERENCES

2010 Highway Capacity Manual, Transportation Research Board, 2010.

Congestion Management Program for Los Angeles County, Metro, 2010.

Trip Generation, 10th Edition, Institute of Transportation Engineers (ITE), 2017.

California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

Guide for the Preparation of Traffic Impact Studies, Caltrans 2002.

APPENDIX A: METHODOLOGIES & ASSUMPTIONS MEMO

FEHR & PEERS

MEMORANDUM

Date: March 11th, 2019

To: Genevieve Sharrow, MIG & Craig Hensley, AICP, City of Duarte

From: John Muggridge, AICP, and Steven Keith, AICP

Subject: **Duarte Station Specific Plan Transportation Impact Analysis Methodologies and Assumptions**

OC18-3073

Fehr & Peers is preparing the transportation impact analysis for the Duarte Station Specific Plan (Project) in Duarte, California. The purpose of this memorandum is to summarize the methodologies and assumptions that will be used in the study.

This memorandum is divided into the following sections: Project Description, Study Area, Data Collection, Analysis Scenarios, Trip Generation, Trip Distribution, Intersection Impact Analysis Guidelines, and Operations and Methodology Assumptions.

Project Description

This study analyzes traffic conditions associated with the proposed Duarte Station Specific Plan located in the City of Duarte. The proposed project consists of up to 1,400 multi-family mid-rise residential dwelling units, 12,500 square feet of commercial related land uses, and 100,000 square feet of office space. The project is located north of the Duarte/City of Hope Gold Line Metro Station. The approximately 19.08-acre Specific Plan area contains four parcels, each under separate ownership.

The project is the adoption and long-term implementation of the Duarte Station Specific Plan, as amended.

Study Area

Study Intersections

The study area is comprised of 13 signalized intersections and five unsignalized intersections for a total of 18 study intersections, all located within the City of Duarte. These study intersections were identified based on the estimated trip generation and trip distribution of the Project, discussed later in this memorandum, and also informed by the prior Specific Plan. Figure 1 identifies the study intersections listed below:

1. Mountain Avenue & Central Avenue (signalized)
2. Mountain Avenue & Evergreen Street (signalized)
3. Mountain Avenue & Duarte Road (signalized)
4. Buena Vista Street & Huntington Drive (signalized)
5. Buena Vista Street & Central Avenue (signalized)
6. Buena Vista Street & I-210 Westbound On-Ramp (NBL is signalized)
7. Buena Vista Street & Evergreen Street/I-210 Eastbound On-Ramp (signalized)
8. Buena Vista Street & Three Ranch Road (unsignalized)
9. Buena Vista Street & Duarte Road (signalized)
10. I-210 Westbound Off-Ramp & Central Avenue (unsignalized)
11. Village Road & Duarte Road (unsignalized)
12. Duncannon Avenue & Evergreen Street (unsignalized)
13. Hope Drive & Duarte Road (signalized)
14. Highland Avenue & Huntington Drive (signalized)
15. Highland Avenue & Central Avenue (signalized)
16. Highland Avenue & Evergreen Street (unsignalized)
17. Highland Avenue & Business Center Drive (signalized)
18. I-605 Terminus/Mt. Olive Drive & Huntington Drive (signalized)

Off-Ramps and Freeways

Fehr & Peers will discuss the study area, project trip generation, and trip distribution with Caltrans District 7 staff. Depending on conversations with Caltrans staff, the technical analysis could cover off-ramp queuing analysis and freeway mainline segment analysis at the following locations:

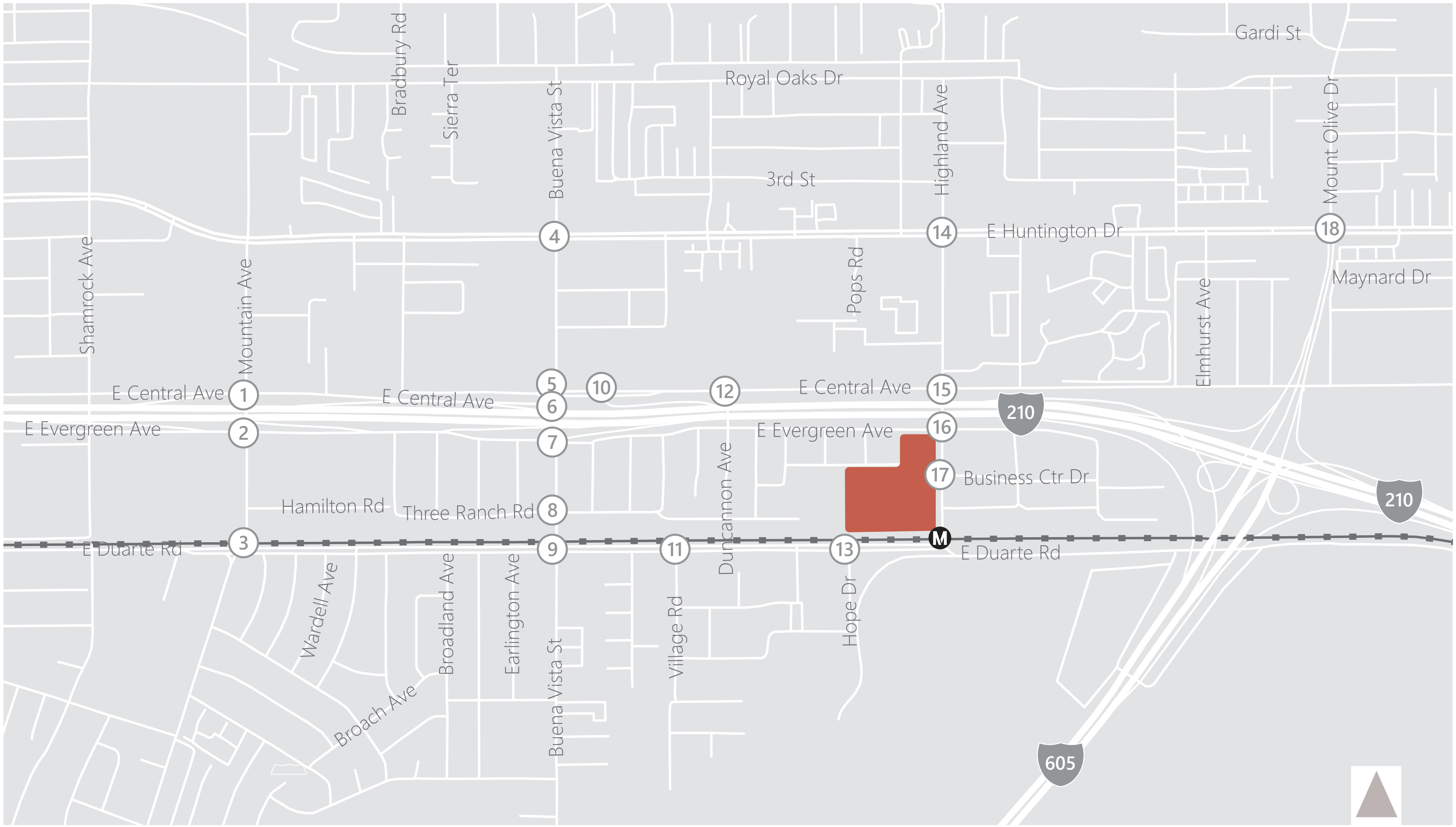
Off-Ramp Queuing

10. I-210 Westbound Off-Ramp & Central Avenue
18. I-605 Terminus/Mt. Olive Drive & Huntington Drive

Freeway Mainline

- I-210 West of Mountain Avenue
- I-210 Between Buena Vista Street and Highland Avenue
- I-210 East of Mt. Olive Drive
- I-605 South of I-210

Study locations and analysis will be finalized during the meeting with Caltrans.



Study Intersections
🟥 Project Site Boundary
Rail
Ⓜ Metro Rail Station

Figure 1

Study Intersection Location

Data Collection

Existing weekday AM peak period (7:00 to 9:00 AM) and PM peak period (4:00 to 6:00 PM) intersection counts were collected at the study intersections listed above on December 4, 2018.

Freeway mainline volumes will be obtained on I-210 and I-605 in the study area using Caltrans' Performance Measurement System (PeMS).

Fehr & Peers collected the following information during a field visit to the study area:

- Lane configurations
- Signal phasing
- Land uses
- Existing pedestrian and bicycle facilities
- On-street parking conditions
- Transit service

As part of the data collection effort Fehr & Peers requests the following from the City of Duarte staff:

- Anticipated driveway locations of the Proposed Project
- Funded roadway improvement projects in the study area that should be considered in the future analysis
- Funded bicycle/pedestrian/transit improvements in the study area that should be considered in the future analysis

The City of Duarte has also provided Fehr & Peers with the following data:

- Pending and approved development projects within 1.5 miles from the Project site that will be included in the forecasting effort. The related projects list is as follows:
    - 1634 Third Street and 1101 Oak Avenue
    - 1122 Huntington Drive
    - 2632 Royal Oaks Drive
    - 946-962 Huntington Drive
    - 1405-37 Huntington Drive
    - 1200 Huntington Drive – Duarte Town Center Specific Plan
    - City of Hope Specific Plan

  - 1193 Huntington Drive
  - 1525 Huntington Drive
  - 928 Huntington Drive

- Signal timing information at intersections containing on- or off-ramps

Analysis Scenarios

In accordance with the California Environmental Quality Act (CEQA) the study will analyze the buildout of the Project in support of the environmental impact report (EIR). The following four scenarios will be analyzed:

- Existing (2018): Existing traffic volumes and lane geometeries will be used to evaluate Existing (2018) conditions.
- Existing (2018) Plus Project: Project traffic assuming buildout of the Project will be added to the Existing Year (2018) traffic volumes to evaluate Existing (2018) Plus Project condtitions.
- Future Year (2025): Future Year (2025) conditions will be developed using the ambient growth rates from the *Congestion Management Program for Los Angeles County* (CMP) (Metro, 2010) and cumulative information, including pending and approved development projects and funded improvements in the study area.
- Future Year (2025) Plus Project: Project traffic assuming buildout of the proposed Project will be added to the Future Year (2025) traffic volumes to evaluate Future Year (2025) Plus Project condtitions.

Trip Generation

The draft Project site plan is provided in Figure 2A-B. The Project proposes the construction of the following:

- Mid-Rise Apartments – 1,400 dwelling units
- Commercial space – 12,500 square feet
  - Broken into 6,250 square feet High-Turnover (Sit Down) Restaurant & 6,250 square feet Retail
- Office – 100,000 square feet

Project Total Trip Generation

Trip generation rates published in *Trip Generation, 10th Edition* (Institute of Transportation Engineers, 2017) were used to calculate Project trip generation estimates for the proposed multi-family housing (mid-rise), high-turnover (sit down) restaurant, retail, and office land uses.

Several trip reduction adjustments were applied to the Project's gross trip generation estimates based on the Project's design, location, programming, and provided amenities. Discussion of these credits is summarized below.

Internal Capture Adjustment

Internal trip capture is the portion of vehicular trips generated by a mixed-use development that both begin and end within the development. An example of this would be residents or employees eating dinner at one of the Project's restaurants. Internal trip estimates were made for each of the Project's land uses based on the specific mix of uses and sizes within the Project utilizing Transportation Research Board (TRB) National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments. This methodology is a best practice for determining internal capture reductions. The NCHRP methodology considers the specific mix and size of uses to determine internal trip capture rates by land use and analysis period.

Transit/Walk Adjustment

The Project is located in a transit-rich environment, adjacent to the Metro Gold Line Duarte/City of Hope subway station, and in close proximity to local bus lines. A 15% vehicle trip reduction was applied to each land use since they are all located within a quarter-mile walking distance of high-quality transit.

Pass-by Adjustment

Pass-by credits were applied to the restaurant and retail uses based on the *Trip Generation Handbook: An ITE Recommended Practice (2003)* document. Pass-by trip credits are commonly applied to commercial uses to reflect the situation where a percentage of patrons to the establishment are traveling on the roadway (for instance, on their way to work) and stop to shop or eat. Under this situation, that trip is already on the roadway and is generated by the ultimate destination of that person's trip. A reduction of 20% was applied to the high-turnover (sit down) restaurant uses and reduction of 50% was applied to the retail uses. No pass-by trip credit is applied to the residential units and office space because traveling to these uses is typically the final destination of one's trip, not a destination one chooses as they pass-by.

Existing Use Adjustment

Existing uses at the Project Site are identified as general light industrial land uses. Generally, when existing land uses are replaced by higher-density uses, the net new trip generation of the new Project is credited because a portion of the new Project's trips are replacing existing trips on the roadway network to the same site for the prior use.

As identified in Table 1, the Project is expected to generate a total estimated net external 6,209 weekday daily trips, including 374 trips (94 inbound/280 outbound) during the weekday AM peak hour and 486 trips (296 inbound/190 outbound) during the weekday PM peak hour.

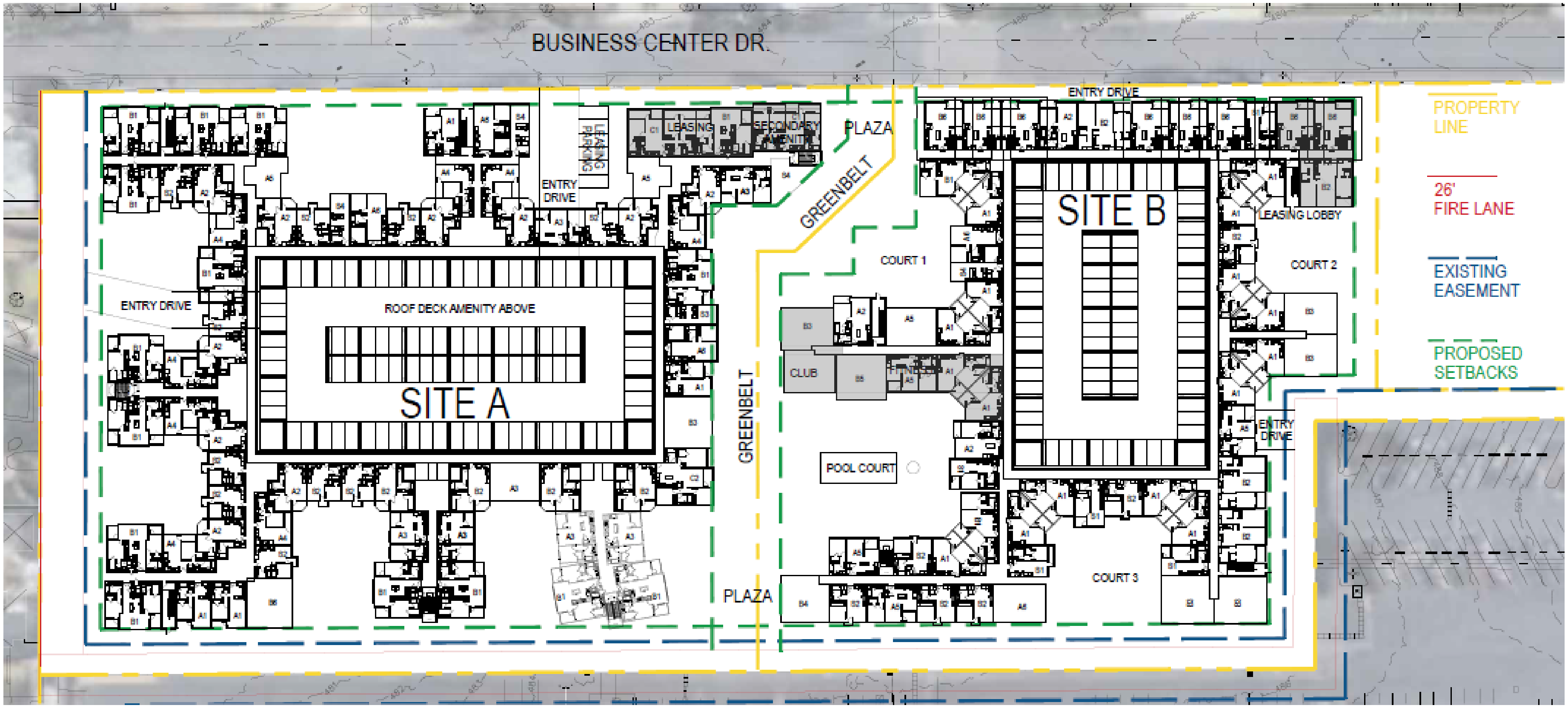


Figure 2A

Draft Site Plan

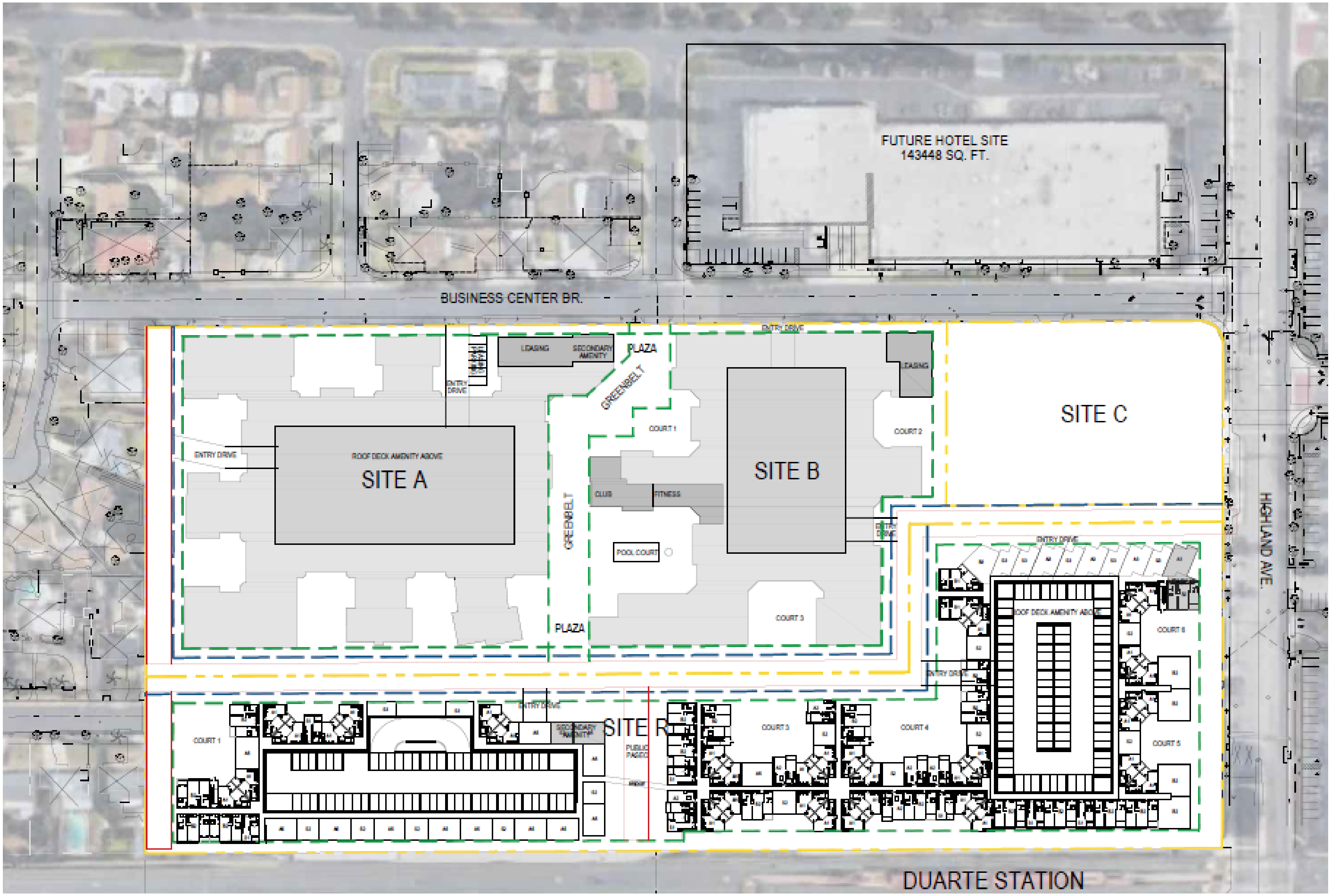


Figure 2B

Draft Site Plan

TABLE 1
DUARTE STATION SPECIFIC PLAN
TRIP GENERATION ESTIMATES

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]							Estimated Trip Generation						
			Daily	AM Peak Hour			PM Peak Hour			Daily	AM Peak Hour Trips			PM Peak Hour Trips		
				Rate	In%	Out%	Rate	In%	Out%		In	Out	Total	In	Out	Total
PROPOSED PROJECT																
Multifamily Housing (Mid-Rise)[b]	221	1,400 DU	[b]	[b]	26%	74%	[b]	61%	39%	7,628	118	337	455	340	218	558
Less: Internal capture [c]			*3%*		*1%*	*3%*		*3%*	*7%*	*(229)*	*(1)*	*(10)*	*(11)*	*(10)*	*(15)*	*(25)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(1,110)*	*(18)*	*(49)*	*(67)*	*(50)*	*(30)*	*(80)*
Net External Vehicle Trips										6,289	99	278	377	280	173	453
High-Turnover (Sit Down) Restaurant	932	6.25 ksf	112.18	9.94	55%	45%	9.77	62%	38%	701	34	28	62	38	23	61
Less: Internal capture [c]			*28%*		*41%*	*38%*		*25%*	*46%*	*(196)*	*(14)*	*(11)*	*(25)*	*(10)*	*(11)*	*(21)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(76)*	*(3)*	*(3)*	*(6)*	*(4)*	*(2)*	*(6)*
Total Driveway Trips										429	17	14	31	24	10	34
Less: Pass-by [e]			*20%*	*20%*			*20%*			*(86)*	*(3)*	*(3)*	*(6)*	*(5)*	*(2)*	*(7)*
Net External Vehicle Trips										343	14	11	25	19	8	27
Retail	820	6.25 ksf	37.75	0.94	62%	38%	3.81	48%	52%	236	4	2	6	12	12	24
Less: Internal capture [c]			*42%*		*57%*	*33%*		*70%*	*55%*	*(99)*	*(2)*	*(1)*	*(3)*	*(8)*	*(7)*	*(15)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(21)*	*0*	*0*	*0*	*0*	*0*	*0*
Total Driveway Trips										116	2	1	3	4	5	9
Less: Pass-by [e]			*50%*	*50%*			*50%*			*(58)*	*(1)*	*(1)*	*(2)*	*(2)*	*(3)*	*(5)*
Net External Vehicle Trips										58	1	0	1	2	2	4
Office	710	100.00 ksf	[f]	[f]	86%	14%	[f]	16%	84%	1,061	103	17	120	18	96	114
Less: Internal capture [c]			*15%*		*17%*	*74%*		*60%*	*5%*	*(159)*	*(18)*	*(13)*	*(31)*	*(11)*	*(5)*	*(16)*
Less: Transit/Walk/Bike credit [d]			*15%*	*15%*			*15%*			*(135)*	*(13)*	*(1)*	*(14)*	*(1)*	*(14)*	*(15)*
Net External Vehicle Trips										767	72	3	75	6	77	83
TOTAL DRIVEWAY TRIPS										7,601	190	296	486	314	265	579
TOTAL PROJECT EXTERNAL VEHICLE TRIPS										7,457	186	292	478	307	260	567
EXISTING USE CREDIT																
General Light Industrial	110	313.96 ksf	[g]	[g]	88%	12%	[g]	13%	87%	1,248	92	12	104	11	70	81
Net External Vehicle Trips										1,248	92	12	104	11	70	81
TOTAL EXISTING USE CREDIT										1,248	92	12	104	11	70	81
NET INCREMENTAL EXTERNAL TRIPS										6,209	94	280	374	296	190	486

Notes:

[a] Source: Institute of Transportation Engineers (ITE), *Trip Generation, 10th Edition* , 2017.

[b] ITE Multifamily Housing (Mid-Rise) trip generation equations used rather than linear trip generation rate:
Daily: $T = 5.45*A - 1.75$, where T = trips, A = area in ksf (Suburban/Urban rate used)
AM Peak Hour: $Ln(T) = 0.98*LN(A) - 0.98$, where T = trips, A = area in ksf (Suburban/Urban equation used)
PM Peak Hour: $Ln(T) = 0.96*LN(A) - 0.63$, where T = trips, A = area in ksf (Suburban/Urban equation used)

[c] Internal capture represents the percentage of trips between land uses that occur within the site. Transportation Research Board (TRB) National Cooperative Highway Research Program (NCHRP) Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, 2011. The daily credit is assumed to be 75% of peak hour credits taken.

[d] The transit, walk, and bike credit is based on the development's proximity to the Duarte Gold Line Station and Duarte's Central Business District.

[e] The pass-by credit is based on *Trip Generation Handbook: An ITE Recommended Practice* , 2003.

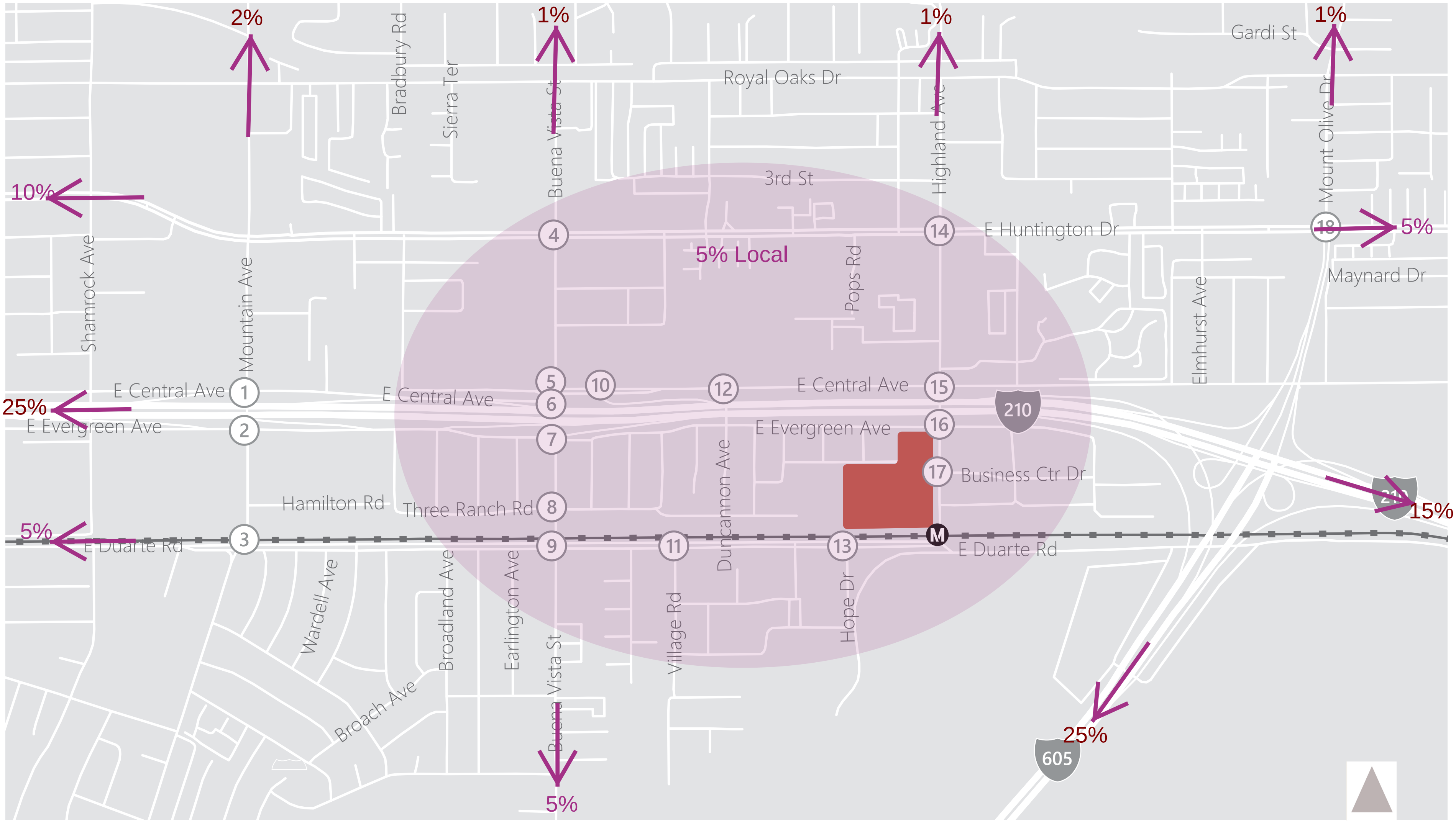
[f] ITE Office trip generation equations used rather than linear trip generation rate:
Daily: $Ln(T) = 0.97 Ln(A) + 2.50$, where T = trips, A = area in ksf (Suburban/Urban equation used)
AM Peak Hour: $T = 0.94(A) + 26.49$, where T = trips, A = area in ksf (Suburban/Urban equation used)
PM Peak Hour: $Ln(T) = 0.95 Ln(A) + 0.36$, where T = trips, A = area in ksf (Suburban/Urban equation used)

[g] ITE General Light Industrial trip generation equations used rather than linear trip generation rate:
Daily: $T = 3.79*A + 57.96$, where T = trips, A = area in ksf (Suburban/Urban equation used)
AM Peak Hour: $Ln(T) = 0.74*Ln(A) + 0.39$, where T = trips, A = area in ksf (Suburban/Urban equation used)
PM Peak Hour: $Ln(T) = 0.69*Ln(A) + 0.43$, where T = trips, A = area in ksf (Suburban/Urban equation used)

Trip Distribution

The Project trip distribution is based on a variety of different sources such as the Southern California Association of Governments (SCAG) Travel Demand Forecasting Model, the prior Duarte Specific Plan, other approved projects nearby, and Project team experience. A select zone analysis with the SCAG Travel Demand Forecasting Model was used to inform the general distribution patterns for this study. The model used information from the traffic analysis zone (TAZ) where the Project is located to estimate the distribution of trips.

Other important factors used to inform the Project trip distribution included: the characteristics of the street system serving the project site; accessibility of routes to and from the Project site; locations of commercial centers residents of the Project would be drawn to, and locations of residential areas other persons would be drawn from. These are factored into the model but also are used to help refine the outputs. The trip distribution will be finalized through conversations with the Project team and city officials to ensure that the assumptions are realistic and vetted. The distribution of Project trips is illustrated in Figure 3.



Study Intersections

🟥 Project Site Boundary

Rail

Ⓜ Metro Rail Station

Figure 3

Trip Distribution

Intersection Impact Analysis Guidelines

Intersection impact analysis criteria consistent with City of Duarte and Los Angeles CMP guidelines will be applied for this Project.

Signalized Intersections

The following thresholds of significance for the incremental increase in the V/C ratio will be used to assess significant transportation impacts at the signalized intersections located within the City of Duarte. The significance of the Project's incremental increase in the V/C ratio is dependent upon the underlying LOS value for that specific peak hour based on the following thresholds:

LOS	Final V/C Ratio	Project Related Increase in V/C
E or F	> 0.901	equal to or greater than 0.020

Unsignalized Intersections

The following factors will be used to assess significant transportation impacts at the unsignalized intersections in the City of Duarte. The results represent the HCM unsignalized LOS:

- Intersection is projected to decline to LOS E or F from LOS D or better with the addition of traffic volumes associated with the proposed project; and
- The intersection meets signal warrants either caused by project volumes, or project volumes are added at an intersection that meets signal warrants in the baseline scenario(s).

Signal warrants are volume based thresholds to determine whether a signal would be recommended, as determined in the *California Manual on Uniform Traffic Control Devices*, also known as MUTCD 2014 (Caltrans, 2014*)*. The peak hour signal warrant test will be used for the analysis. The warrant for a traffic signal is met if a plotted point representing the vehicles per hour on the major street (for both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for one hour lies above the applicable curve in Figure 4C-3 in MUTCD 2014 for the combination of approach lanes. If the combined volume of the major approaches and the corresponding conflicting volumes are greater than the threshold determined by the intersection configuration, then a traffic signal could be warranted.

Los Angeles Congestion Management Program (CMP)

A significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C ≥.0.02), causing LOS F (V/C > 1.00). If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C ≥ 0.02). The lead agency may apply more stringent criteria if desired.

Operations and Methodology Assumptions

Intersection Analysis

Signalized intersections will be analyzed using the Intersection Capacity Utilization (ICU) methodology. The ICU methodology is used to determine the intersection volume-to-capacity (V/C) ratio and corresponding LOS for the turning movements and intersection characteristics at the signalized intersections. "Capacity" represents the maximum volume of vehicles in the critical lanes that have a reasonable expectation of passing through an intersection in one hour under prevailing roadway and traffic conditions. The ICU ratios used in this study are calculated by dividing critical traffic movement volumes at an intersection by the capacity per number of lanes for the movement. AM and PM peak hour ICU ratios and LOS grades will be calculated using Fehr & Peers' ICU spreadsheet tool. Lane capacity assumptions will not exceed 1,600 vehicles per lane per hour. Table 2 identifies the LOS criteria for signalized intersections.

Stop-controlled intersections will be analyzed using Synchro 10 software and the *Highway Capacity Manual (HCM) 6th Edition* (Transportation Research Board [TRB], 2017]) methodology. Table 3 identifies the LOS criteria for the stop-controlled intersections. Additionally, peak hour signal warrant analysis will be conducted for stop-controlled intersections as determined in the *2014 California Manual on Uniform Traffic Control Devices*, also known as MUTCD 2014 (Caltrans, 2014*)*.

Off-Ramp and Freeway Analysis

Off-Ramp

A freeway off-ramp queuing analysis will be conducted to determine queuing conditions at the off-ramps as a result of traffic from the Project. Queue lengths will be estimated using Synchro traffic analysis software package. Each intersection will be configured according to its existing (and future, if applicable) arrival conditions, including signal timing and physical geometry. The focus of the queuing analysis is to determine if there is adequate storage capacity at the off-ramps. Off-ramp queuing will be identified if the off-ramp queue extends beyond 85% of the ramp length during the AM and PM peak hours.

Freeway Mainlines

Freeway mainlines will be evaluated using the Highway Capacity Software (HCS) tool, which applies methodologies contained in the *HCM 6th Edition*. The LOS will be calculated for each study facility based on density of number of vehicles per hour per lane. Table 4 describes the LOS thresholds for freeway sections identified in the HCM 6th Edition.

Per the *Guide for the Preparation of Traffic Impact Studies* (Caltrans, 2002), Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities. However, Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, the existing measure of effectiveness (MOE) should be maintained (Caltrans TIS Guide, page 1). This latter criterion does not allow for determination of effect if the segment is operating at LOS F under baseline conditions. For informational purposes, freeway segments operating at LOS F under base conditions will be identified if the Project traffic added to these segments is estimated to represent 2% or more of the total traffic on the segments.

TABLE 2

LEVEL OF SERVICE DEFINITIONS FOR SIGNALIZED INTERSECTIONS

Level of Service	Intersection Capacity Utilization	Definition
A	0.000-0.600	EXCELLENT. No Vehicle waits longer than one red light and no approach phase is fully used.
B	0.601-0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701-0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801-0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901-1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

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

TABLE 3

LEVEL OF SERVICE DEFINITIONS FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Control Delay
A	< 10.0
B	> 10.0 and < 15.0
C	> 15.0 and < 25.0
D	> 25.0 and < 35.0
E	> 35.0 and < 50.0
F	> 50.0

Source: *Highway Capacity Manual* (Transportation Research Board, 2016.)

TABLE 4

LEVEL OF SERVICE DEFINITIONS FOR FREEWAY SEGMENTS

Level of Service	Mainline (Basic) Density (vplpm) [a]	Definition
A	< 11	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.
B	> 11 to 18	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.
C	> 18 to 26	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
D	> 26 to 35	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.
E	> 35 to 45	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.
F	> 45	Represents a breakdown in flow.

Notes:

[a]: Density is reported in vehicles per lane per mile.

Source: *Highway Capacity Manual* (Transportation Research Board, 2016.)

APPENDIX B: INTERSECTION COUNTS

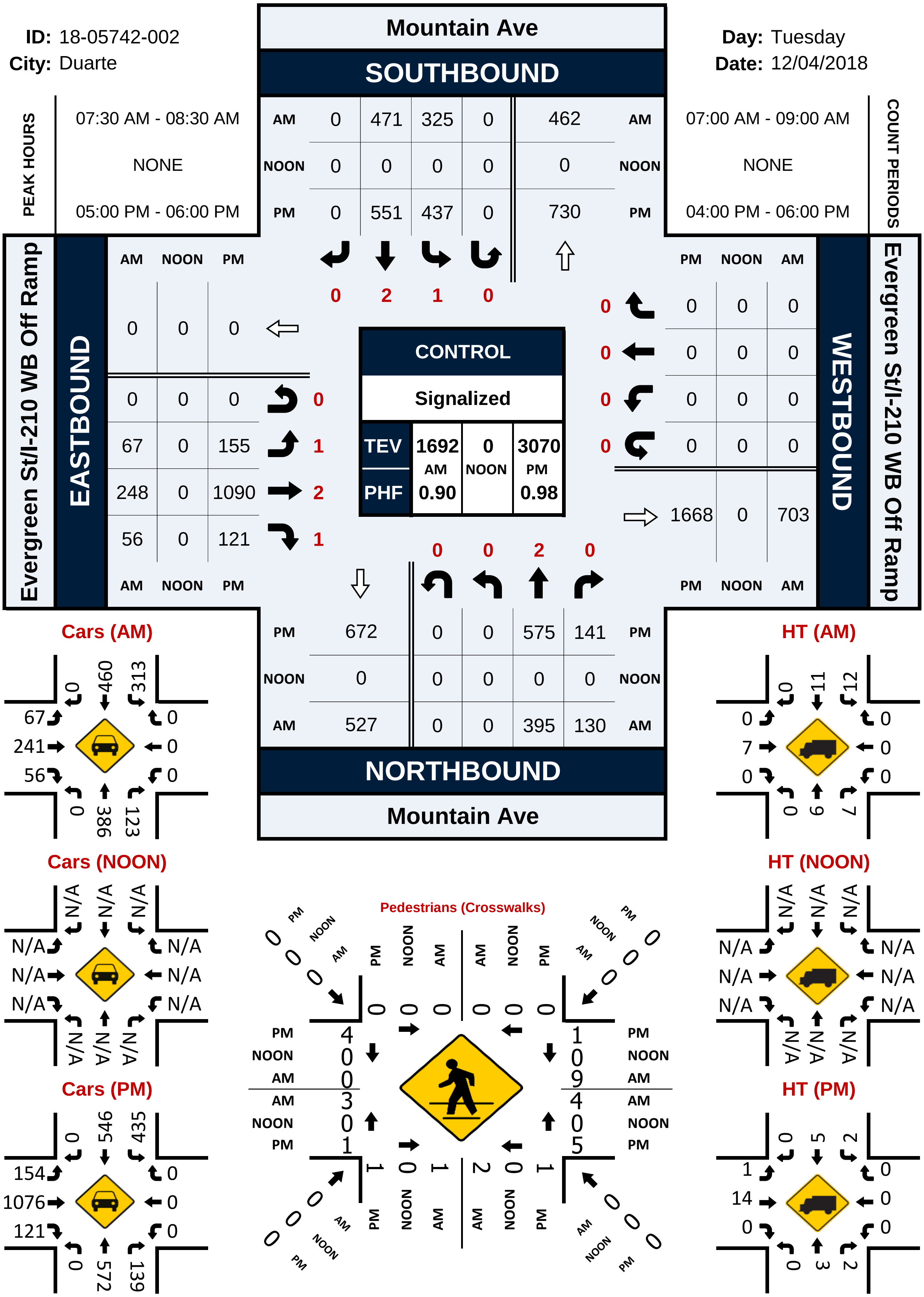
Prepared by National Data & Surveying Services

Mountain Ave & Evergreen St/I-210 WB Off Ramp

Peak Hour Turning Movement Count

ID: 18-05742-002
City: Duarte

Day: Tuesday
Date: 12/04/2018



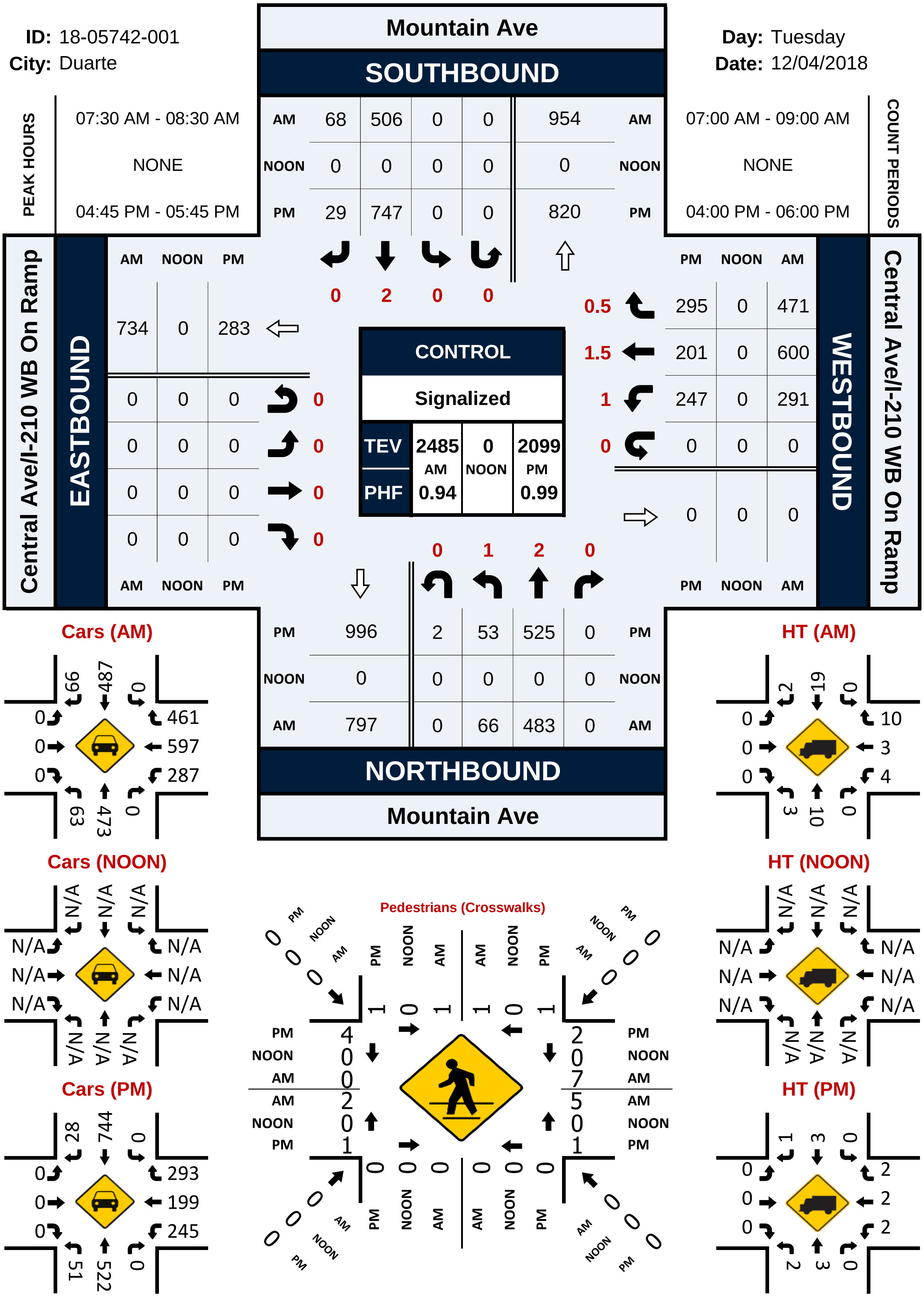
Prepared by National Data & Surveying Services

Mountain Ave & Central Ave/I-210 WB On Ramp

Peak Hour Turning Movement Count

ID: 18-05742-001
City: Duarte

Day: Tuesday
Date: 12/04/2018



PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Mountain Ave

SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	68	506	0	0	954
NOON	0	0	0	0	0
PM	29	747	0	0	820
	0	2	0	0	

Central Ave/I-210 WB On Ramp

WESTBOUND

		PM	NOON	AM
0.5	↰	295	0	471
1.5	←	201	0	600
1	↱	247	0	291
0	↶	0	0	0
	⇨	0	0	0

Central Ave/I-210 WB On Ramp

EASTBOUND

AM	NOON	PM		
734	0	283	⇦	
0	0	0	↶	0
0	0	0	↱	0
0	0	0	→	0
0	0	0	↴	0

Mountain Ave

NORTHBOUND

	⇩	↶	↰	↑	↱
		0	1	2	0
PM	996	2	53	525	0
NOON	0	0	0	0	0
AM	797	0	66	483	0

CONTROL

Signalized

	AM	NOON	PM
TEV	2485	0	2099
PHF	0.94		0.99

Cars (AM)

Southbound	66	487	0
Westbound	461	597	287
Northbound	63	473	0
Eastbound	0	0	0

HT (AM)

Southbound	2	19	0
Westbound	10	3	4
Northbound	3	10	0
Eastbound	0	0	0

Cars (NOON)

N/A N/A N/A / N/A N/A N/A / N/A N/A N/A / N/A N/A N/A

HT (NOON)

N/A N/A N/A / N/A N/A N/A / N/A N/A N/A / N/A N/A N/A

Cars (PM)

Southbound	28	744	0
Westbound	293	199	245
Northbound	51	522	0
Eastbound	0	0	0

HT (PM)

Southbound	1	3	0
Westbound	2	2	2
Northbound	2	3	0
Eastbound	0	0	0

Pedestrians (Crosswalks)

	PM	NOON	AM	AM	NOON	PM
North crosswalk	1	0	1	1	0	1
South crosswalk	0	0	0	0	0	0

	PM	NOON	AM	AM	NOON	PM
West crosswalk	4	0	0	2	0	1
East crosswalk	2	0	7	5	0	1

Diagonals: PM 0, NOON 0, AM 0 (each corner)

Prepared by National Data & Surveying Services

Mountain Ave & Duarte Rd

Peak Hour Turning Movement Count

ID: 18-05742-003
City: Duarte

Day: Tuesday
Date: 12/04/2018

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Mountain Ave

SOUTHBOUND

AM	160	164	60	0	534
NOON	0	0	0	0	0
PM	222	286	132	0	596
	1	1	1	0	

Duarte Rd

EASTBOUND

AM	NOON	PM	
341	0	411	
0	0	0	0
171	0	234	1
194	0	447	2
23	0	98	0
AM	NOON	PM	

CONTROL

Signalized

	AM	NOON	PM
TEV	1503	0	2130
PHF	0.90		0.92

WESTBOUND

Duarte Rd

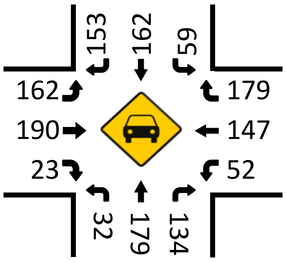
	PM	NOON	AM
1	214	0	181
2	167	0	148
1	45	0	52
0	0	0	0
	694	0	389
	PM	NOON	AM

		0	1	1	1
PM	429	0	22	148	115
NOON	0	0	0	0	0
AM	239	0	33	182	135

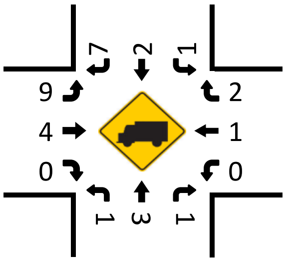
NORTHBOUND

Mountain Ave

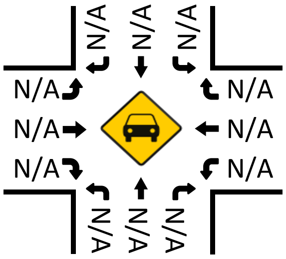
Cars (AM)



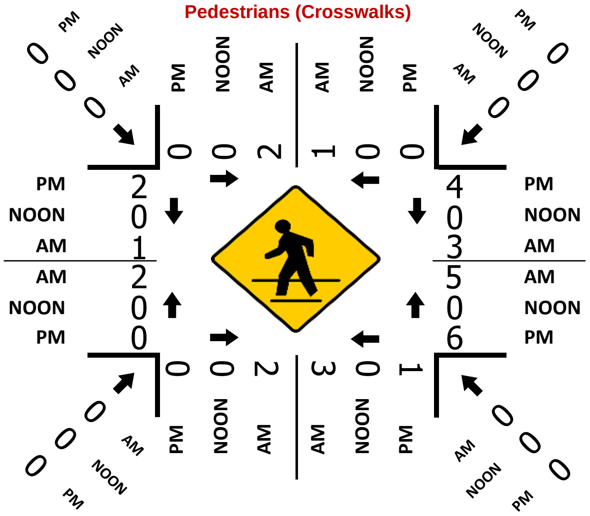
HT (AM)



Cars (NOON)



Pedestrians (Crosswalks)



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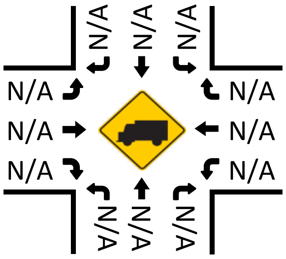
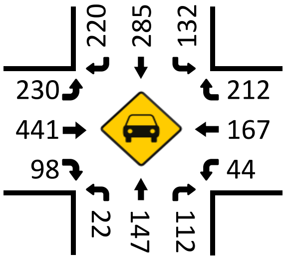
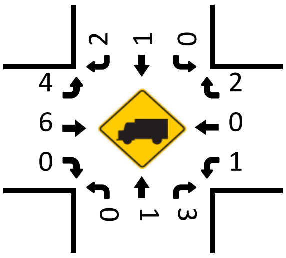


Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Buena Vista St & Huntington Dr

Peak Hour Turning Movement Count

ID: 18-05742-004
City: Duarte

Day: Tuesday
Date: 12/04/2018

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Buena Vista St

SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	53	242	59	0	421
NOON	0	0	0	0	0
PM	88	275	179	0	453
	0.5	1.5	1	0	

Huntington Dr

EASTBOUND

		AM	NOON	PM
⇦		1407	0	907
↶	0	7	0	17
↱	1	43	0	87
→	2	198	0	1076
↴	1	73	0	164

CONTROL

Signalized

	AM	NOON	PM
TEV	2515	0	3371
PHF	0.98		0.98

Huntington Dr

WESTBOUND

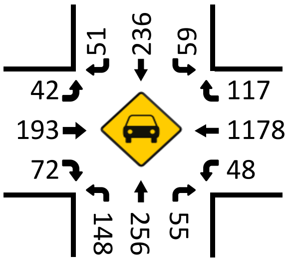
		PM	NOON	AM
1	↰	70	0	119
2	←	589	0	1197
1	↲	140	0	50
0	↶	14	0	3
	⇨	1432	0	322

NORTHBOUND

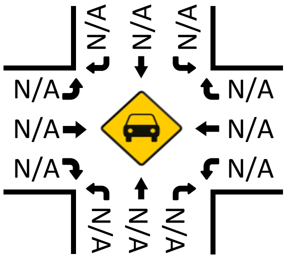
Buena Vista St

	⇩	↶	↰	↑	↱
		0	1	1.5	0.5
PM	579	0	213	296	163
NOON	0	0	0	0	0
AM	365	0	150	259	62

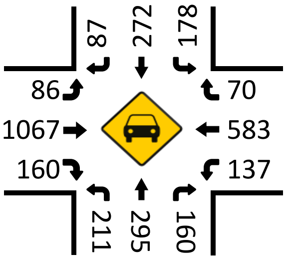
Cars (AM)



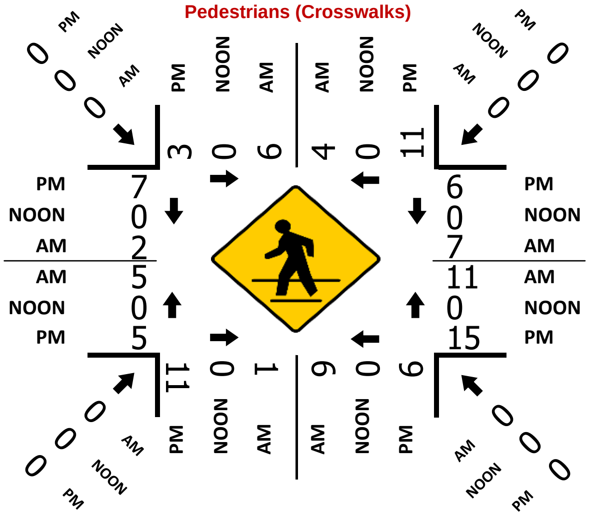
Cars (NOON)



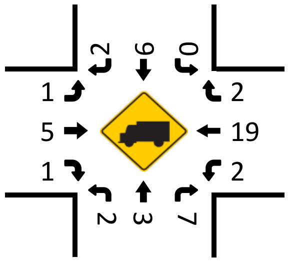
Cars (PM)



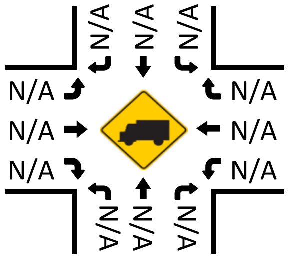
Pedestrians (Crosswalks)



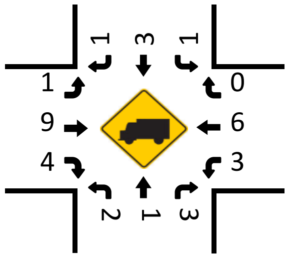
HT (AM)



HT (NOON)



HT (PM)



Prepared by National Data & Surveying Services

Buena Vista St & Central Ave

Peak Hour Turning Movement Count

ID: 18-05742-005
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
07:45 AM - 08:45 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:30 PM - 05:30 PM	PM	04:00 PM - 06:00 PM

Buena Vista St
SOUTHBOUND

	↲	↓	↳	↶	⇧	
AM	14	402	39	0	585	AM
NOON	0	0	0	0	0	NOON
PM	20	569	89	1	702	PM
	0	2	1	0		

Central Ave
EASTBOUND

AM	NOON	PM		
228	0	251	⇦	
0	0	0	↶	0
1	0	8	↰	1
12	0	105	→	1
32	0	168	↴	0
AM	NOON	PM		

CONTROL

Signalized

TEV	1933 AM	0 NOON	2285 PM
PHF	0.86		0.90

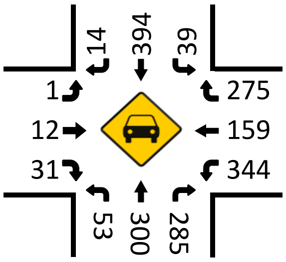
Central Ave
WESTBOUND

		PM	NOON	AM
1	↰	360	0	277
1	←	179	0	160
1	↲	183	0	348
0	↶	0	0	0
	⇨	412	0	338
		PM	NOON	AM

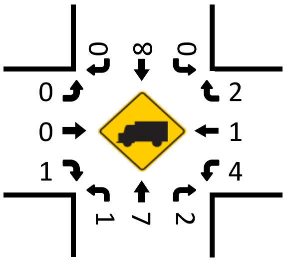
NORTHBOUND
Buena Vista St

		0	1	2	0	
	⇩	↶	↰	↑	↱	
PM	920	0	52	333	218	PM
NOON	0	0	0	0	0	NOON
AM	782	0	54	307	287	AM

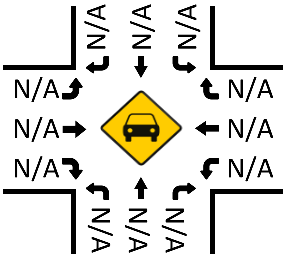
Cars (AM)



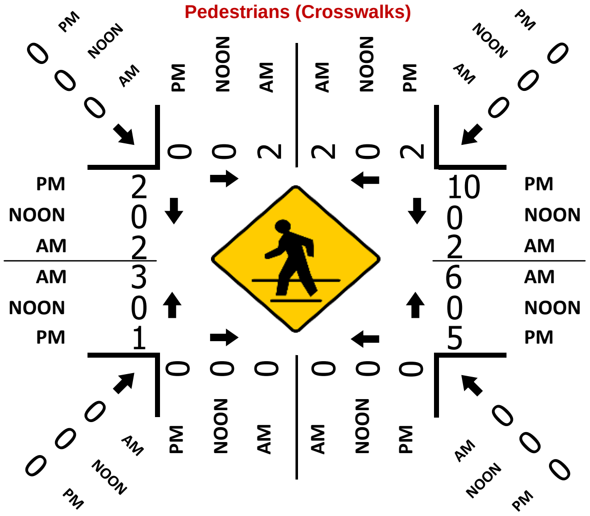
HT (AM)



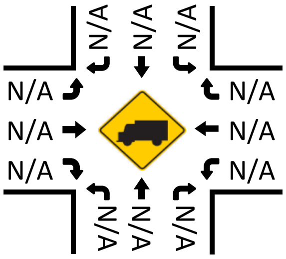
Cars (NOON)



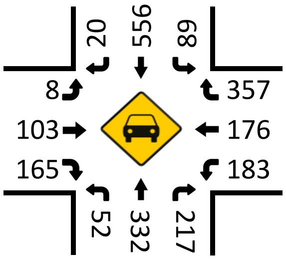
Pedestrians (Crosswalks)



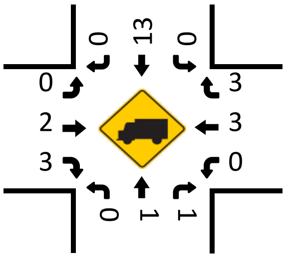
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Buena Vista St & I-210 WB On-Ramp

Peak Hour Turning Movement Count

ID: 18-05742-006
City: Duarte

Day: Tuesday
Date: 12/04/2018

	PEAK HOURS	COUNT PERIODS
AM	07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:00 PM - 05:00 PM	04:00 PM - 06:00 PM

Buena Vista St
SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	174	607	0	0	650
NOON	0	0	0	0	0
PM	340	566	0	0	635
	0	2	0	0	

I-210 WB On-Ramp
EASTBOUND

	AM	NOON	PM	
⇦	248	0	565	
⤴	0	0	0	0
↱	0	0	0	0
→	0	0	0	0
↴	0	0	0	0

I-210 WB On-Ramp
WESTBOUND

		PM	NOON	AM
↰	0	0	0	0
←	0	0	0	0
↲	0	0	0	0
↶	0	0	0	0
⇨		0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	1505	0	1766
PHF	0.84		0.95

NORTHBOUND
Buena Vista St

	⇩	↶	↰	↑	↱
		0	1	2	0
PM	566	0	225	635	0
NOON	0	0	0	0	0
AM	607	0	74	650	0

Cars (AM)

	169 ↲	599 ↓	0 ↶
0 ↱			↰ 0
0 →			← 0
0 ↴			↲ 0
	↰ 70	↑ 640	↱ 0

HT (AM)

	5 ↲	8 ↓	0 ↶
0 ↱			↰ 0
0 →			← 0
0 ↴			↲ 0
	↰ 4	↑ 10	↱ 0

Cars (NOON)

	N/A ↲	N/A ↓	N/A ↶
N/A ↱			↰ N/A
N/A →			← N/A
N/A ↴			↲ N/A
	↰ N/A	↑ N/A	↱ N/A

HT (NOON)

	N/A ↲	N/A ↓	N/A ↶
N/A ↱			↰ N/A
N/A →			← N/A
N/A ↴			↲ N/A
	↰ N/A	↑ N/A	↱ N/A

Cars (PM)

	338 ↲	555 ↓	0 ↶
0 ↱			↰ 0
0 →			← 0
0 ↴			↲ 0
	↰ 214	↑ 632	↱ 0

HT (PM)

	2 ↲	11 ↓	0 ↶
0 ↱			↰ 0
0 →			← 0
0 ↴			↲ 0
	↰ 11	↑ 3	↱ 0

Pedestrians (Crosswalks)

PM 0	PM 0	NOON 0	AM 0	→	AM 0	NOON 0	PM 0	PM 0
NOON 0				←				NOON 0
AM 0								AM 0
PM	3 ↓						↓ 0	PM
NOON	0						0	NOON
AM	3						0	AM
AM	6						0	AM
NOON	0 ↑						↑ 0	NOON
PM	1						0	PM
AM 0				→				AM 0
NOON 0				←				NOON 0
PM 0	PM 0	NOON 0	AM 0		AM 0	NOON 0	PM 0	PM 0

Prepared by National Data & Surveying Services

Buena Vista St & Evergreen St/I-210 EB On-Ramp

Peak Hour Turning Movement Count

ID: 18-05742-007
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
07:30 AM - 08:30 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:00 PM - 05:00 PM	PM	04:00 PM - 06:00 PM

Buena Vista St

SOUTHBOUND

AM	0	365	220	2	732
NOON	0	0	0	0	0
PM	0	371	187	0	860
	0	2	1	0	

Evergreen St/I-210 EB On-Ramp

EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
378	0	348	0.5
3	0	217	1
313	0	99	0.5
AM	NOON	PM	

Evergreen St/I-210 EB On-Ramp

WESTBOUND

	PM	NOON	AM
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
	649	0	418
	PM	NOON	AM

CONTROL

Signalized

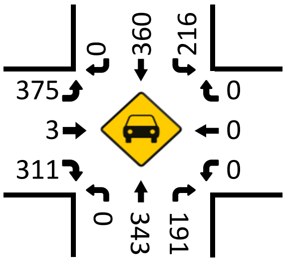
	AM	NOON	PM
TEV	1828	0	1979
PHF	0.84		0.99

		0	0	2	1
PM	470	0	0	512	245
NOON	0	0	0	0	0
AM	678	0	0	352	195

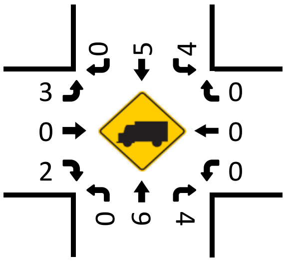
NORTHBOUND

Buena Vista St

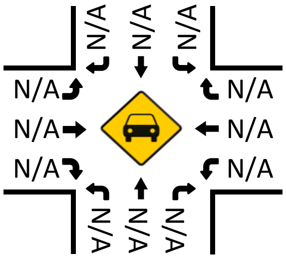
Cars (AM)



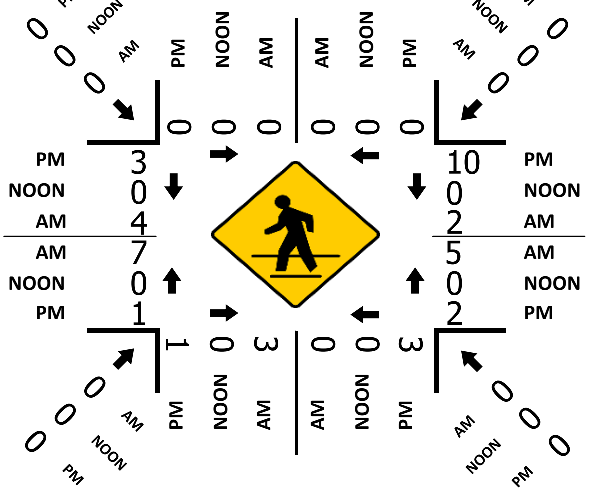
HT (AM)



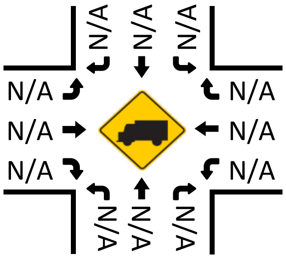
Cars (NOON)



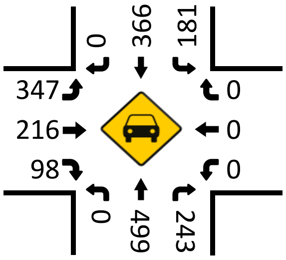
Pedestrians (Crosswalks)



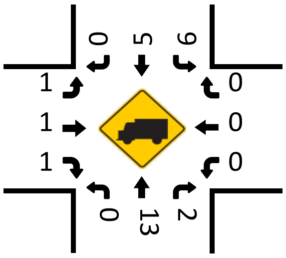
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Buena Vista St & 3 Ranch Rd

Peak Hour Turning Movement Count

ID: 18-05742-008
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

Buena Vista St

SOUTHBOUND

	↲	↓	↳	↶	⇧	
AM	15	647	10	0	544	AM
NOON	0	0	0	0	0	NOON
PM	23	418	29	1	764	PM
	0	2	0	0		

3 Ranch Rd

EASTBOUND

	AM	NOON	PM	
⇦	25	0	27	
↶	0	0	0	0
↰	5	0	2	0
→	3	0	8	1
↴	18	0	38	0

CONTROL

2-Way Stop (EB/WB)

	AM	NOON	PM
TEV	1305	0	1327
PHF	0.78		0.98

3 Ranch Rd

WESTBOUND

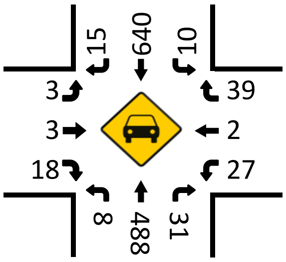
		PM	NOON	AM
0	↰	24	0	39
1	←	1	0	2
0	↲	16	0	27
0	↶	0	0	0
	⇨	64	0	44

NORTHBOUND

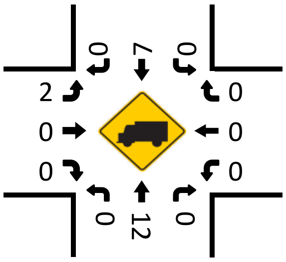
Buena Vista St

	⇩	↶	↰	↑	↱	
		0	0	2	0	
PM	472	0	3	737	27	PM
NOON	0	0	0	0	0	NOON
AM	692	0	8	500	31	AM

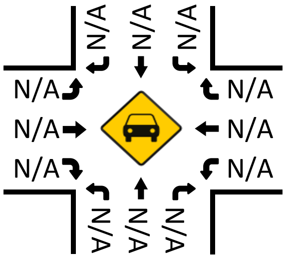
Cars (AM)



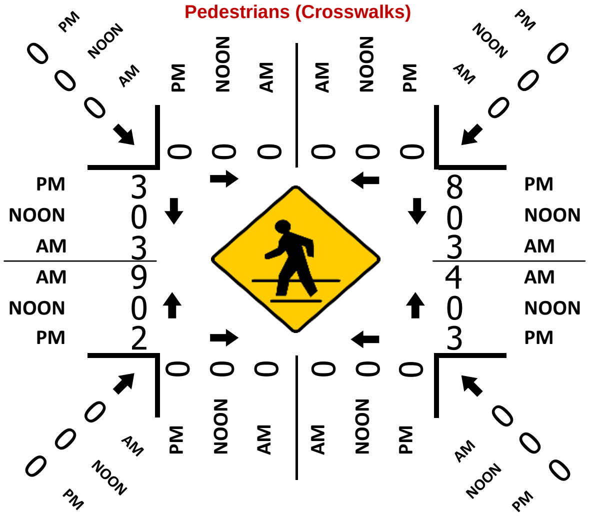
HT (AM)



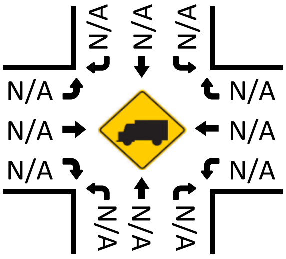
Cars (NOON)



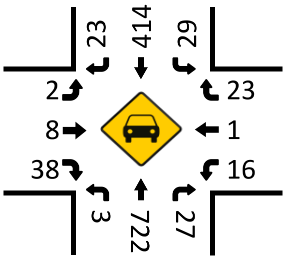
Pedestrians (Crosswalks)



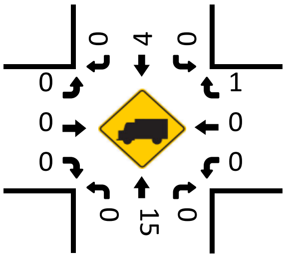
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Buena Vista St & Duarte Rd

Peak Hour Turning Movement Count

ID: 18-05742-009
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Buena Vista St
SOUTHBOUND

AM	102	216	349	0	539	AM
NOON	0	0	0	0	0	NOON
PM	115	280	100	0	761	PM
	↲	↓	↳	↶	⇧	
	0.5	1	0.5	0		

Duarte Rd
EASTBOUND

AM	NOON	PM		
311	0	449	⇦	
0	0	0	↶	0
220	0	181	↰	1
323	0	422	→	1.5
29	0	105	↴	0.5
AM	NOON	PM		

CONTROL

Signalized

	AM	NOON	PM
TEV	1962	0	2311
PHF	0.86		0.87

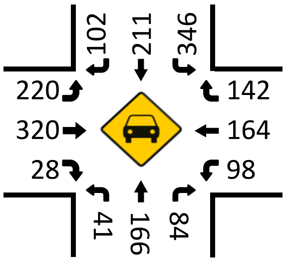
Duarte Rd
WESTBOUND

		PM	NOON	AM
0.5	↰	337	0	145
1.5	←	255	0	167
1	↱	118	0	106
0	↶	0	0	0
	⇨	598	0	761
		PM	NOON	AM

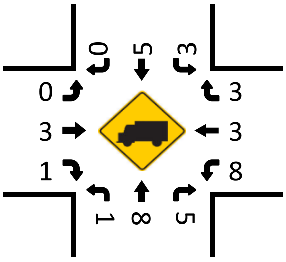
NORTHBOUND
Buena Vista St

		0	1	2	0	
	⇩	↶	↰	↑	↱	
PM	503	0	79	243	76	PM
NOON	0	0	0	0	0	NOON
AM	351	0	42	174	89	AM

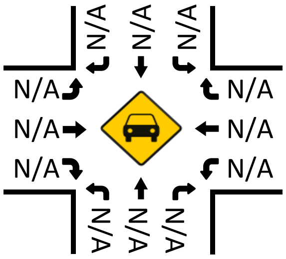
Cars (AM)



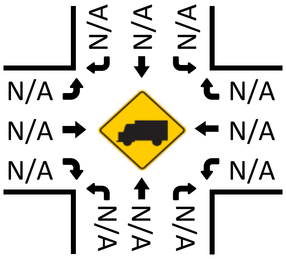
HT (AM)



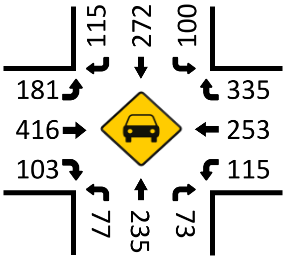
Cars (NOON)



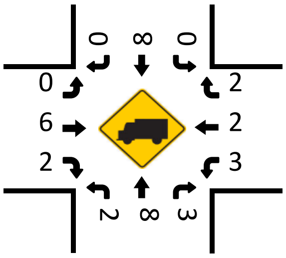
HT (NOON)



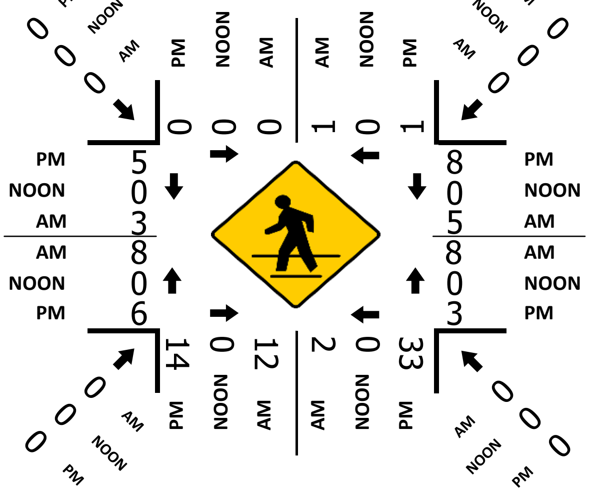
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



Prepared by National Data & Surveying Services

I-210 WB Off-Ramp & Central Ave

Peak Hour Turning Movement Count

ID: 18-05742-010
City: Duarte

Day: Tuesday
Date: 12/04/2018

	PEAK HOURS	COUNT PERIODS
AM	07:45 AM - 08:45 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

I-210 WB Off-Ramp — SOUTHBOUND

	↲	↓	↳	U-turn	⇧
AM	7	0	0	0	13
NOON	0	0	0	0	0
PM	23	0	3	0	20
Lanes	0	1	0	0	

Central Ave — EASTBOUND

	AM	NOON	PM	Lanes
⇦	777	0	728	
U-turn	0	0	0	0
Left	4	0	6	0
→	334	0	408	1
Right	0	0	0	0

Central Ave — WESTBOUND

Lanes		PM	NOON	AM
0	Right	10	0	8
1	←	483	0	472
0	Left	0	0	0
0	U-turn	0	0	0
	⇨	576	0	668

CONTROL

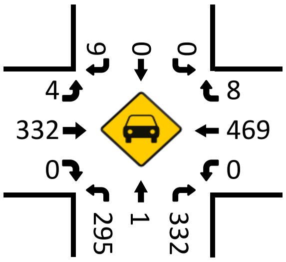
1-Way Stop (NB)

	AM	NOON	PM
TEV	1458	0	1324
PHF	0.86		0.84

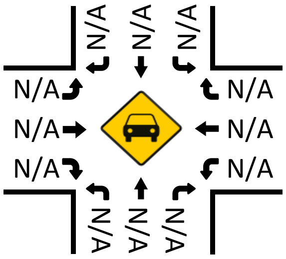
I-210 WB Off-Ramp — NORTHBOUND

	⇩	U-turn	↰	↑	↱
Lanes		0	1	0	1
PM	0	0	222	4	165
NOON	0	0	0	0	0
AM	0	0	298	1	334

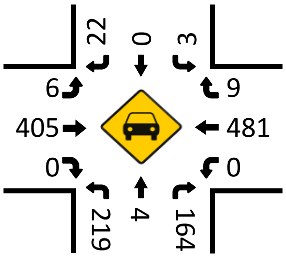
Cars (AM)



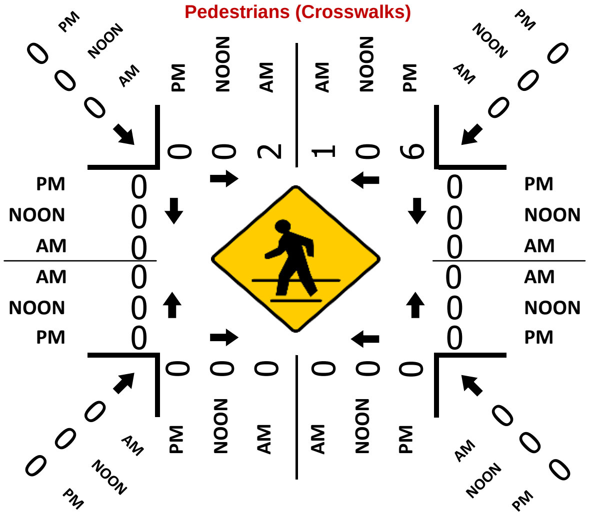
Cars (NOON)



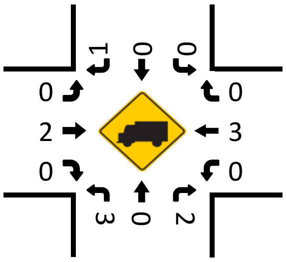
Cars (PM)



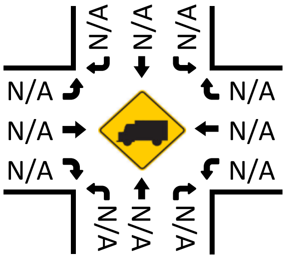
Pedestrians (Crosswalks)



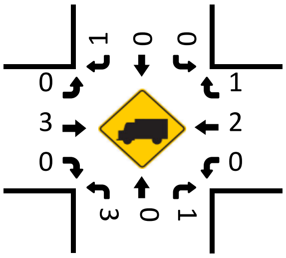
HT (AM)



HT (NOON)



HT (PM)



Prepared by National Data & Surveying Services

Village Rd & Duarte Rd

Peak Hour Turning Movement Count

ID: 18-05742-011
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Village Rd

SOUTHBOUND

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

Duarte Rd

EASTBOUND

AM	NOON	PM	
383	0	674	
0	0	2	0
0	0	0	0
502	0	509	2
262	0	43	0
AM	NOON	PM	

CONTROL

1-Way Stop (NB)

TEV	1332	0	1418
	AM	NOON	PM
PHF	0.86		0.91

WESTBOUND

Duarte Rd

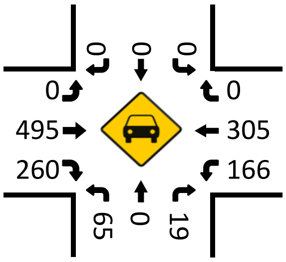
	PM	NOON	AM
0	0	0	0
2	420	0	317
1	10	0	166
0	1	0	0
	691	0	521
	PM	NOON	AM

		0	1	0	1	
PM	53	0	252	0	181	PM
NOON	0	0	0	0	0	NOON
AM	428	0	66	0	19	AM

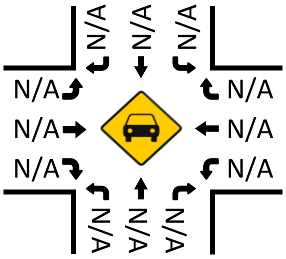
NORTHBOUND

Village Rd

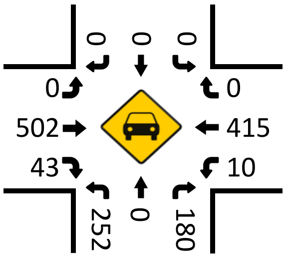
Cars (AM)



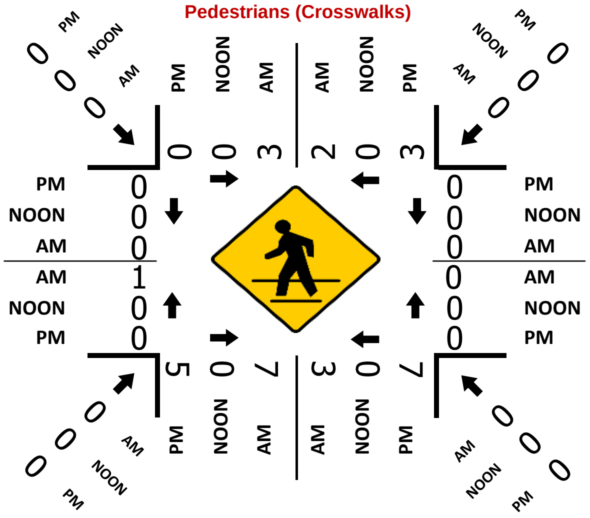
Cars (NOON)



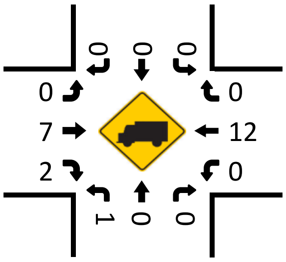
Cars (PM)



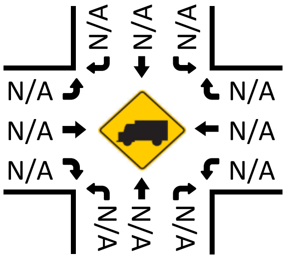
Pedestrians (Crosswalks)



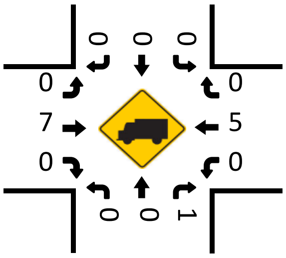
HT (AM)



HT (NOON)



HT (PM)



Prepared by National Data & Surveying Services

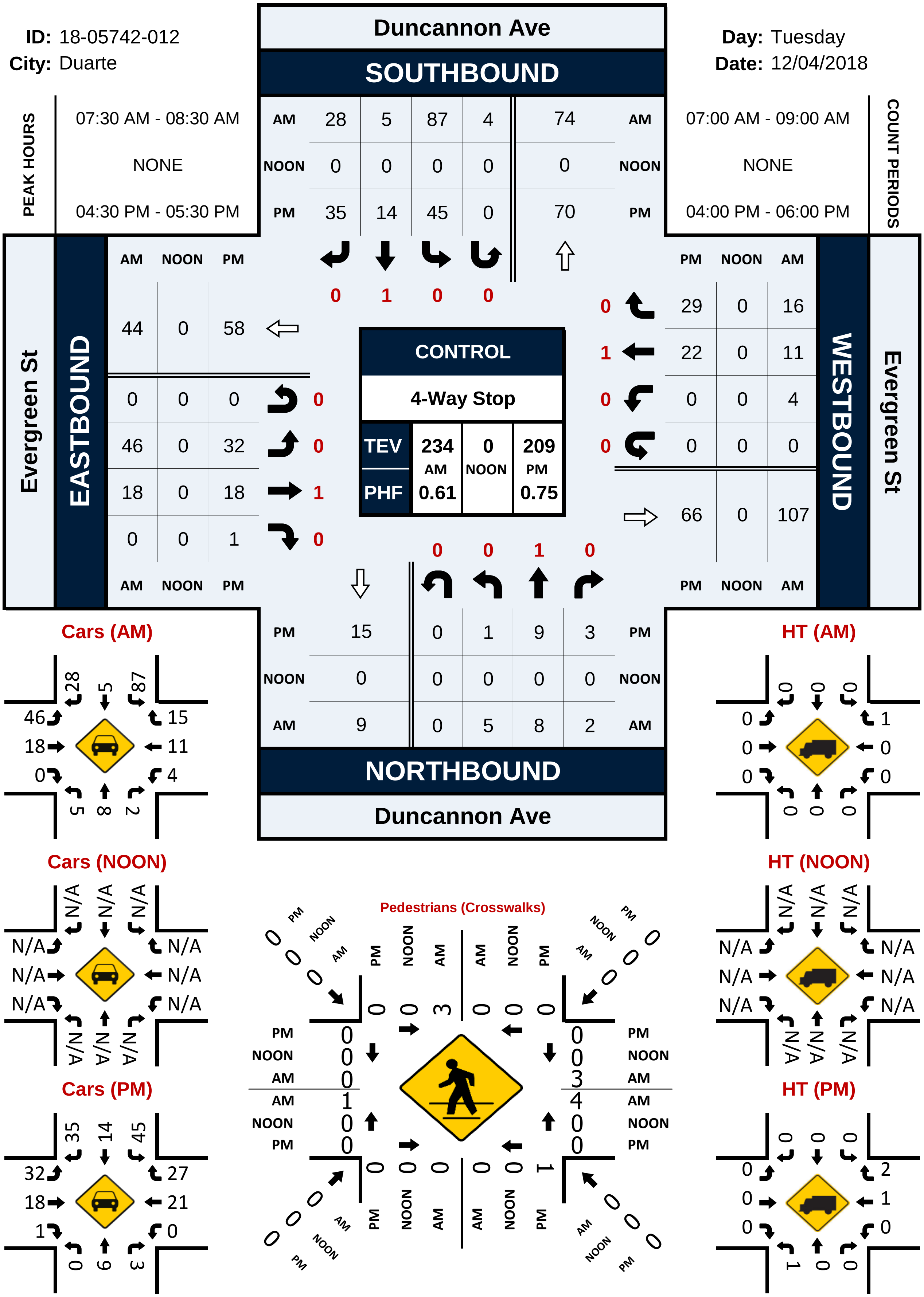
Duncannon Ave & Evergreen St

Peak Hour Turning Movement Count

ID: 18-05742-012
City: Duarte

Day: Tuesday
Date: 12/04/2018

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM



Duncannon Ave SOUTHBOUND

	↲	↓	↳	U	⇧
AM	28	5	87	4	74
NOON	0	0	0	0	0
PM	35	14	45	0	70
	0	1	0	0	

Evergreen St EASTBOUND

	AM	NOON	PM	
⇦	44	0	58	
U	0	0	0	0
↱	46	0	32	0
→	18	0	18	1
↴	0	0	1	0

Evergreen St WESTBOUND

		PM	NOON	AM
↰	0	29	0	16
←	1	22	0	11
↲	0	0	0	4
U	0	0	0	0
⇨		66	0	107

Duncannon Ave NORTHBOUND

	⇩	U	↰	↑	↱
		0	0	1	0
PM	15	0	1	9	3
NOON	0	0	0	0	0
AM	9	0	5	8	2

CONTROL
4-Way Stop

	AM	NOON	PM
TEV	234	0	209
PHF	0.61		0.75

Cars (AM)

	Right	Through	Left
Southbound	28	5	87
Eastbound	0	18	46
Westbound	15	11	4
Northbound	2	8	5

HT (AM)

	Right	Through	Left
Southbound	0	0	0
Eastbound	0	0	0
Westbound	1	0	0
Northbound	0	0	0

Cars (NOON)

	Right	Through	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

HT (NOON)

	Right	Through	Left
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Cars (PM)

	Right	Through	Left
Southbound	35	14	45
Eastbound	1	18	32
Westbound	27	21	0
Northbound	3	9	0

HT (PM)

	Right	Through	Left
Southbound	0	0	0
Eastbound	0	0	0
Westbound	2	1	0
Northbound	0	0	1

Pedestrians (Crosswalks)

	AM	NOON	PM
North leg →	3	0	0
North leg ←	0	0	0
West leg ↓	0	0	0
West leg ↑	1	0	0
East leg ↓	3	0	0
East leg ↑	4	0	0
South leg →	0	0	0
South leg ←	0	0	1
NW diagonal	0	0	0
NE diagonal	0	0	0
SW diagonal	0	0	0
SE diagonal	0	0	0

Prepared by National Data & Surveying Services

Hope Drive & Duarte Rd

Peak Hour Turning Movement Count

ID: 18-05742-013
City: Duarte

Day: Tuesday
Date: 12/04/2018

	PEAK HOURS	COUNT PERIODS
AM	07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

Hope Drive

SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
	0	0	0	0	

Duarte Rd

EASTBOUND

	AM	NOON	PM	
⇦	493	0	432	
↶	0	0	0	0
↱	0	0	0	0
→	393	0	656	2
↴	126	0	41	0

Duarte Rd

WESTBOUND

		PM	NOON	AM
↰	0	0	0	0
←	2	304	0	421
↲	1	26	0	37
↶	0	0	0	0
⇨		705	0	409

CONTROL

Signalized

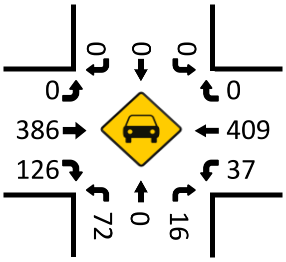
	AM	NOON	PM
TEV	1065	0	1205
PHF	0.89		0.87

NORTHBOUND

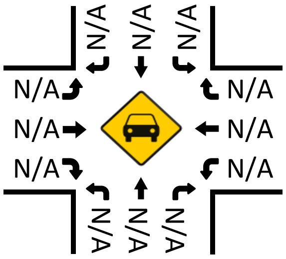
Hope Drive

	⇩	↶	↰	↑	↱
		0	1	0	1
PM	68	1	128	0	49
NOON	0	0	0	0	0
AM	163	0	72	0	16

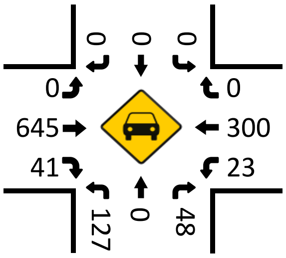
Cars (AM)



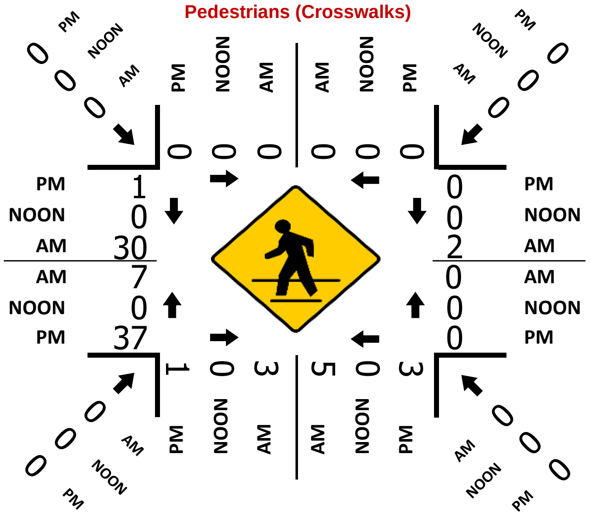
Cars (NOON)



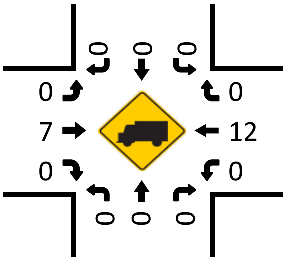
Cars (PM)



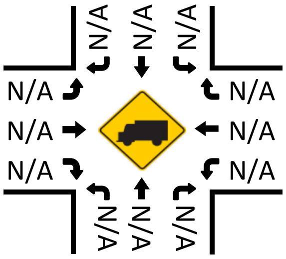
Pedestrians (Crosswalks)



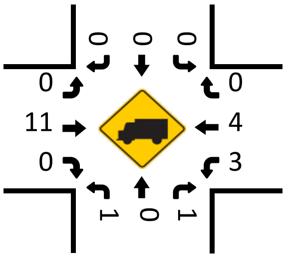
HT (AM)



HT (NOON)



HT (PM)



Prepared by National Data & Surveying Services

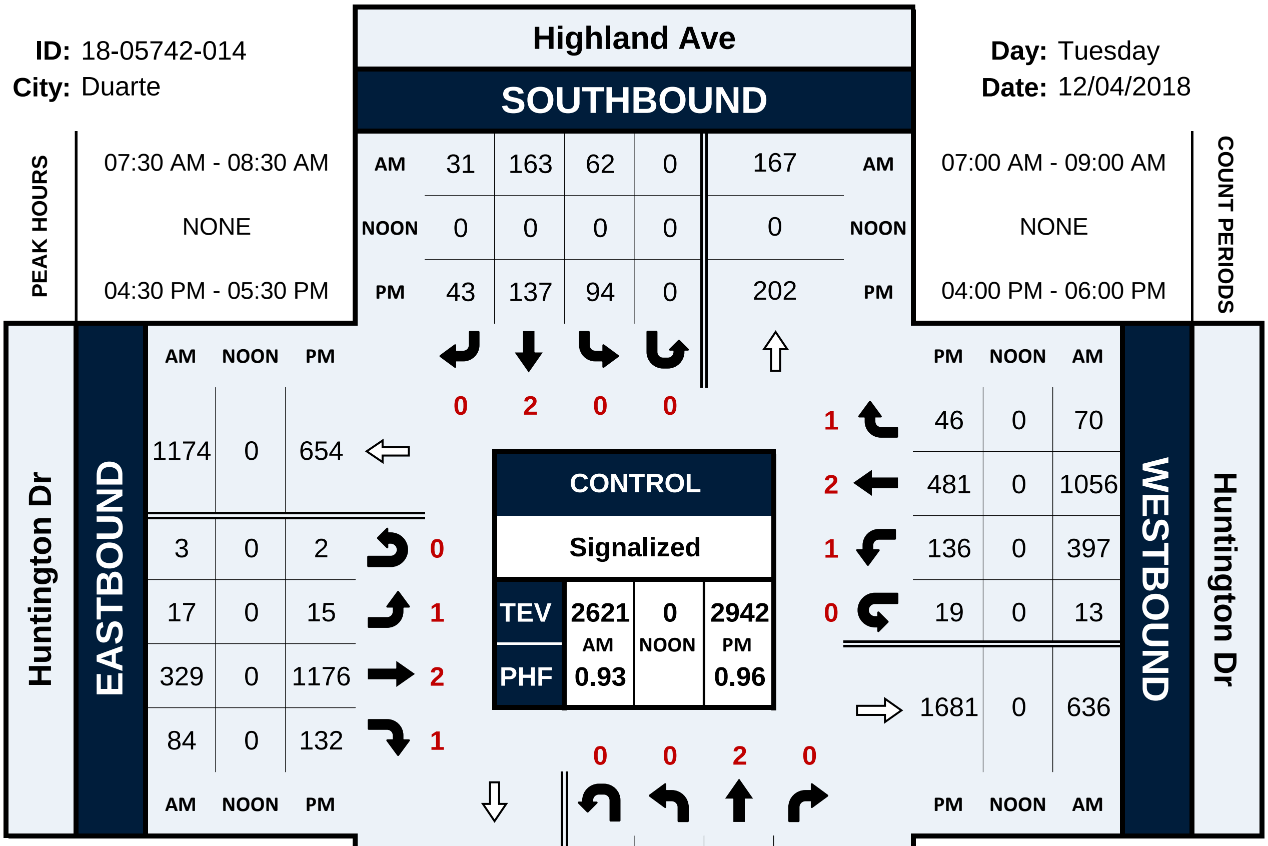
Highland Ave & Huntington Dr

Peak Hour Turning Movement Count

ID: 18-05742-014
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM



Highland Ave
SOUTHBOUND

AM	31	163	62	0	167
NOON	0	0	0	0	0
PM	43	137	94	0	202
	0	2	0	0	

Huntington Dr
EASTBOUND

AM	NOON	PM	
1174	0	654	
3	0	2	0
17	0	15	1
329	0	1176	2
84	0	132	1
AM	NOON	PM	

WESTBOUND
Huntington Dr

	PM	NOON	AM
1	46	0	70
2	481	0	1056
1	136	0	397
0	19	0	13
	1681	0	636
	PM	NOON	AM

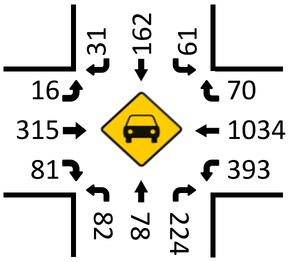
CONTROL
Signalized

	AM	NOON	PM
TEV	2621	0	2942
PHF	0.93		0.96

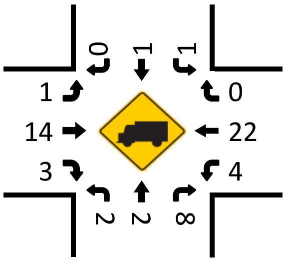
		0	0	2	0
PM	405	0	128	141	392
NOON	0	0	0	0	0
AM	644	0	84	80	232

NORTHBOUND
Highland Ave

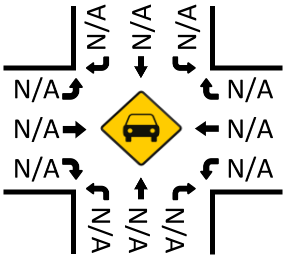
Cars (AM)



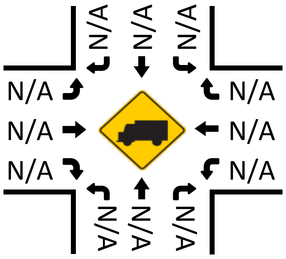
HT (AM)



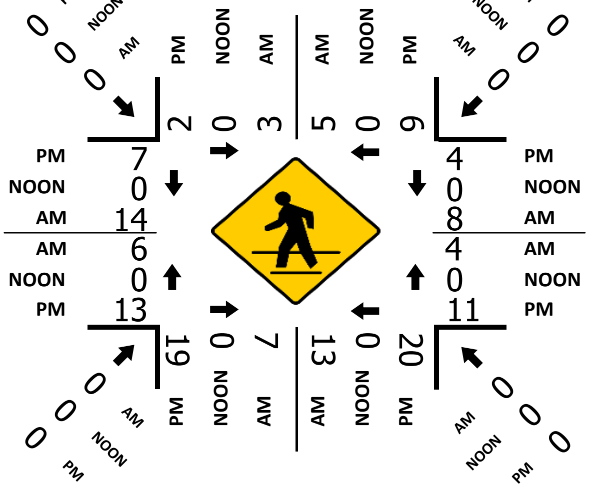
Cars (NOON)



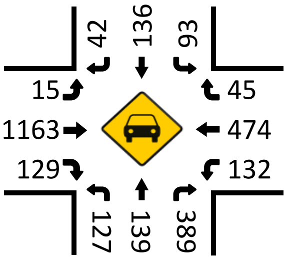
HT (NOON)



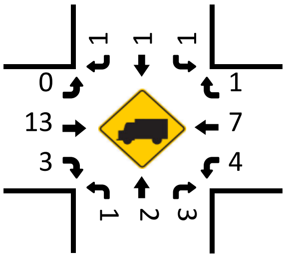
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Highland Ave & Central Ave

Peak Hour Turning Movement Count

ID: 18-05742-015
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
07:30 AM - 08:30 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:30 PM - 05:30 PM	PM	04:00 PM - 06:00 PM

Highland Ave

SOUTHBOUND

AM	127	397	44	0	341	AM
NOON	0	0	0	0	0	NOON
PM	164	176	109	0	610	PM
	↲	↓	↳	↶	⇧	
	0	2	0	0		

Central Ave

EASTBOUND

AM	NOON	PM			
376	0	338	⇦		
0	0	0	↶	0	
119	0	124	↱	1	
126	0	323	→	1	
163	0	48	↴	0	
AM	NOON	PM			

CONTROL

Signalized

TEV	1866 AM	0 NOON	2216 PM
PHF	0.85		0.91

Central Ave

WESTBOUND

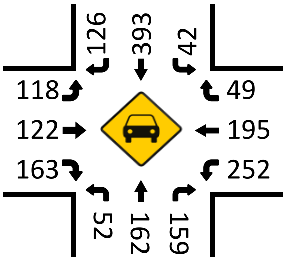
		PM	NOON	AM
0	↰	38	0	49
1	←	99	0	197
1	↲	61	0	259
0	↶	0	0	0
	⇨	983	0	330
		PM	NOON	AM

		0	0	2	0	
	⇩	↶	↰	↑	↱	
PM	285	0	75	448	551	PM
NOON	0	0	0	0	0	NOON
AM	819	0	52	173	160	AM

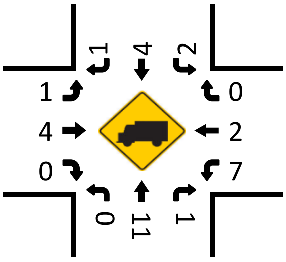
NORTHBOUND

Highland Ave

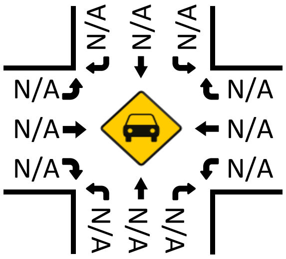
Cars (AM)



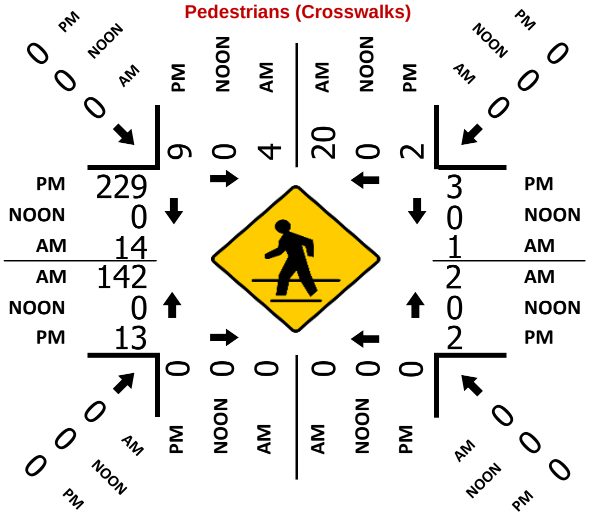
HT (AM)



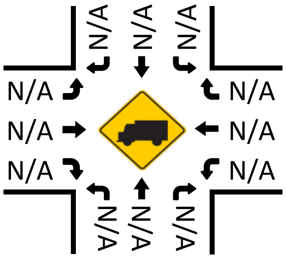
Cars (NOON)



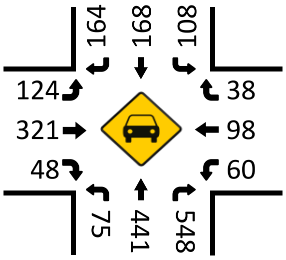
Pedestrians (Crosswalks)



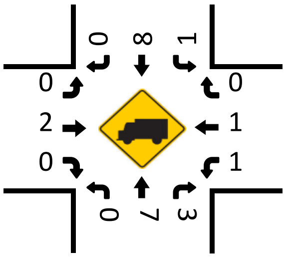
HT (NOON)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Highland Ave & Evergreen St

Peak Hour Turning Movement Count

ID: 18-05742-016
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
07:30 AM - 08:30 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:30 PM - 05:30 PM	PM	04:00 PM - 06:00 PM

Highland Ave

SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	28	700	90	0	384
NOON	0	0	0	0	0
PM	17	256	12	1	1072
	0	2	0	0	

Evergreen St

EASTBOUND

	AM	NOON	PM	
⇦	35	0	22	
↶	0	0	0	0
↱	23	0	35	0
→	2	0	1	1
↴	51	0	20	0

CONTROL

2-Way Stop (EB/WB)

	AM	NOON	PM
TEV	1265	0	1391
PHF	0.85		0.92

Evergreen St

WESTBOUND

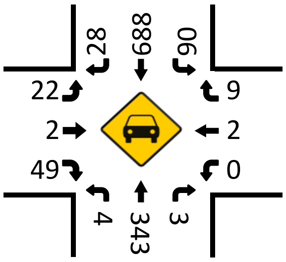
		PM	NOON	AM
0	↰	101	0	13
1	←	0	0	2
0	↲	3	0	0
0	↷	0	0	0
	⇨	18	0	95

NORTHBOUND

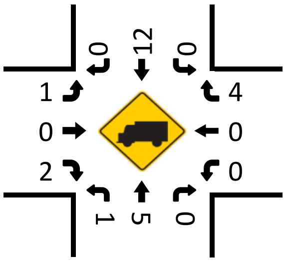
Highland Ave

	⇩	↶	↰	↑	↱
		0	0	2	0
PM	279	0	5	935	5
NOON	0	0	0	0	0
AM	751	0	5	348	3

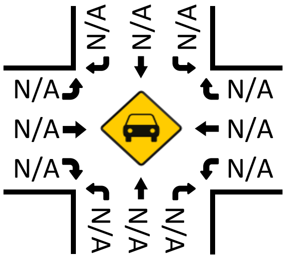
Cars (AM)



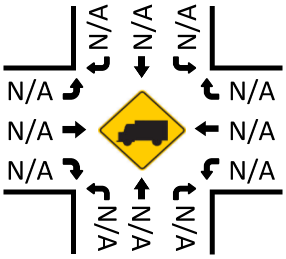
HT (AM)



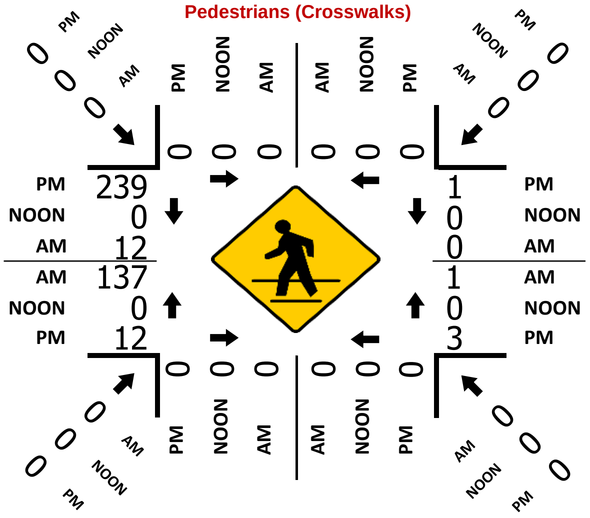
Cars (NOON)



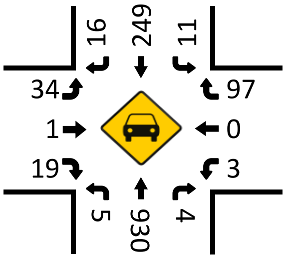
HT (NOON)



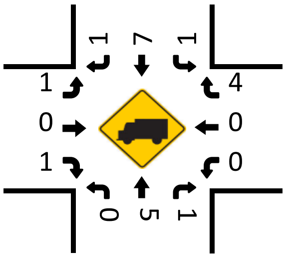
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

Highland Ave & Business Center Dr

Peak Hour Turning Movement Count

ID: 18-05742-017
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
07:30 AM - 08:30 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:30 PM - 05:30 PM	PM	04:00 PM - 06:00 PM

Highland Ave

SOUTHBOUND

	↲	↓	↳	⮌	⇧	
AM	23	691	31	0	360	AM
NOON	0	0	0	0	0	NOON
PM	15	249	6	2	941	PM
	0	3	0	0		

Business Center Dr

EASTBOUND

	AM	NOON	PM	
⇦	30	0	34	
⮌	0	0	0	0
↰	21	0	70	1
→	2	0	0	0
↴	5	0	22	1
	AM	NOON	PM	

WESTBOUND

Business Center Dr

		PM	NOON	AM
1	↰	26	0	8
0	←	1	0	0
1	↲	23	0	3
0	⮌	0	0	0
	⇨	17	0	56
		PM	NOON	AM

CONTROL

Signalized

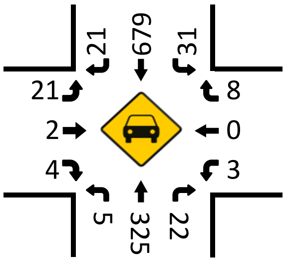
	AM	NOON	PM
TEV	1146	0	1286
PHF	0.84		0.89

	⇩	⮌	↰	↑	↱	
		0	0	3	0	
PM	294	0	18	843	11	PM
NOON	0	0	0	0	0	NOON
AM	700	1	7	331	23	AM

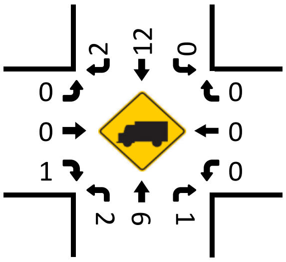
NORTHBOUND

Highland Ave

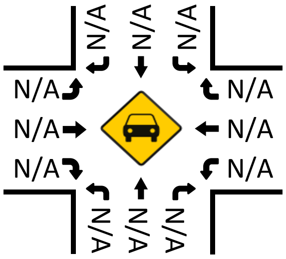
Cars (AM)



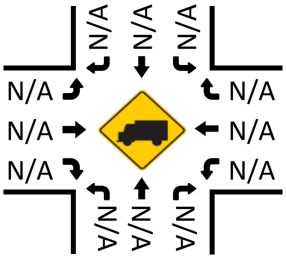
HT (AM)



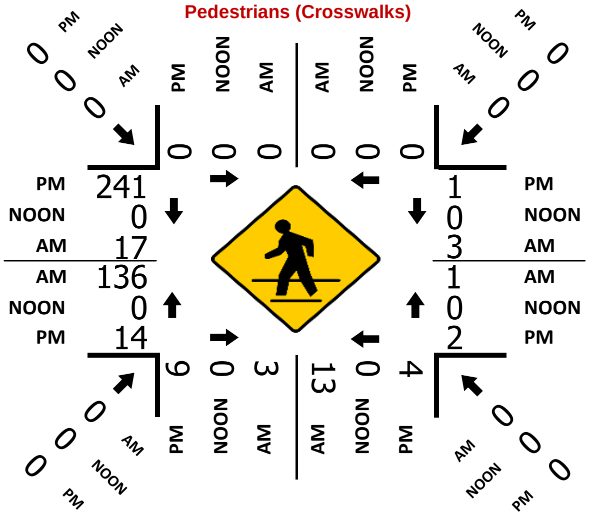
Cars (NOON)



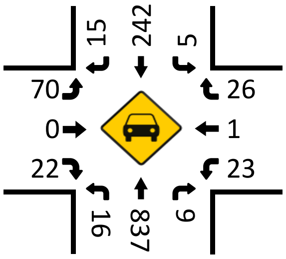
HT (NOON)



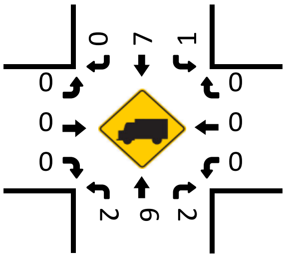
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



Prepared by National Data & Surveying Services

I-605 Terminus/Mt Olive Dr & Huntington Dr

Peak Hour Turning Movement Count

ID: 18-05742-018
City: Duarte

Day: Tuesday
Date: 12/04/2018

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:15 PM - 05:15 PM	04:00 PM - 06:00 PM

I-605 Terminus/Mt Olive Dr
SOUTHBOUND

	↲	↓	↳	↶	⇧
AM	81	337	84	0	325
NOON	0	0	0	0	0
PM	45	271	77	0	303
	0.5	1.5	1	0	

Huntington Dr
EASTBOUND

		AM	NOON	PM
⇦		1797	0	776
↶	0	1	0	8
↱	1	56	0	81
→	2	235	0	846
↴	1	303	0	797

Huntington Dr
WESTBOUND

		PM	NOON	AM
↰	1	42	0	83
←	2	466	0	1061
↲	1	250	0	322
↷	0	4	0	1
⇨		1559	0	563

CONTROL

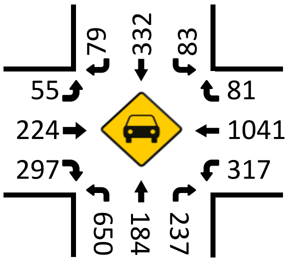
Signalized

	AM	NOON	PM
TEV	3647	0	3960
PHF	0.96		0.95

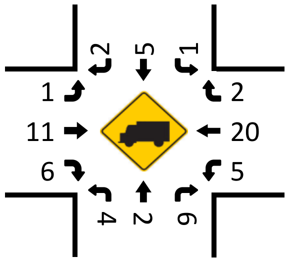
NORTHBOUND
I-605 Terminus/Mt Olive Dr

	⇩	↶	↰	↑	↱
		0	1.5	0.5	1
PM	1322	4	257	180	632
NOON	0	0	0	0	0
AM	962	0	654	186	243

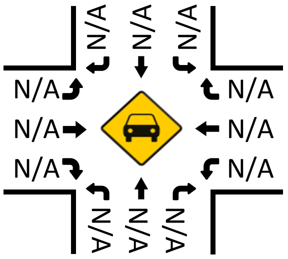
Cars (AM)



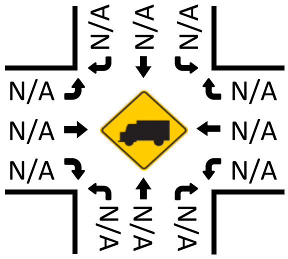
HT (AM)



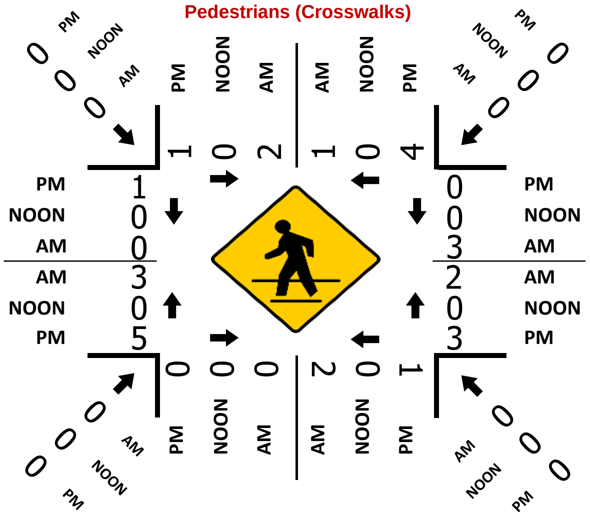
Cars (NOON)



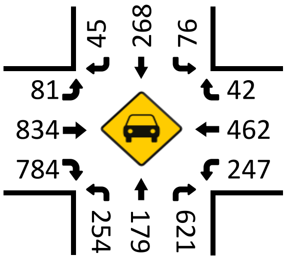
HT (NOON)



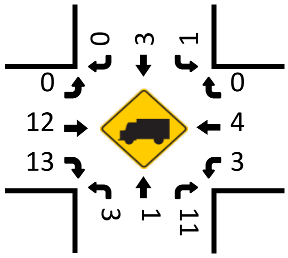
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



APPENDIX C: LANE CONFIGURATIONS & VOLUMES

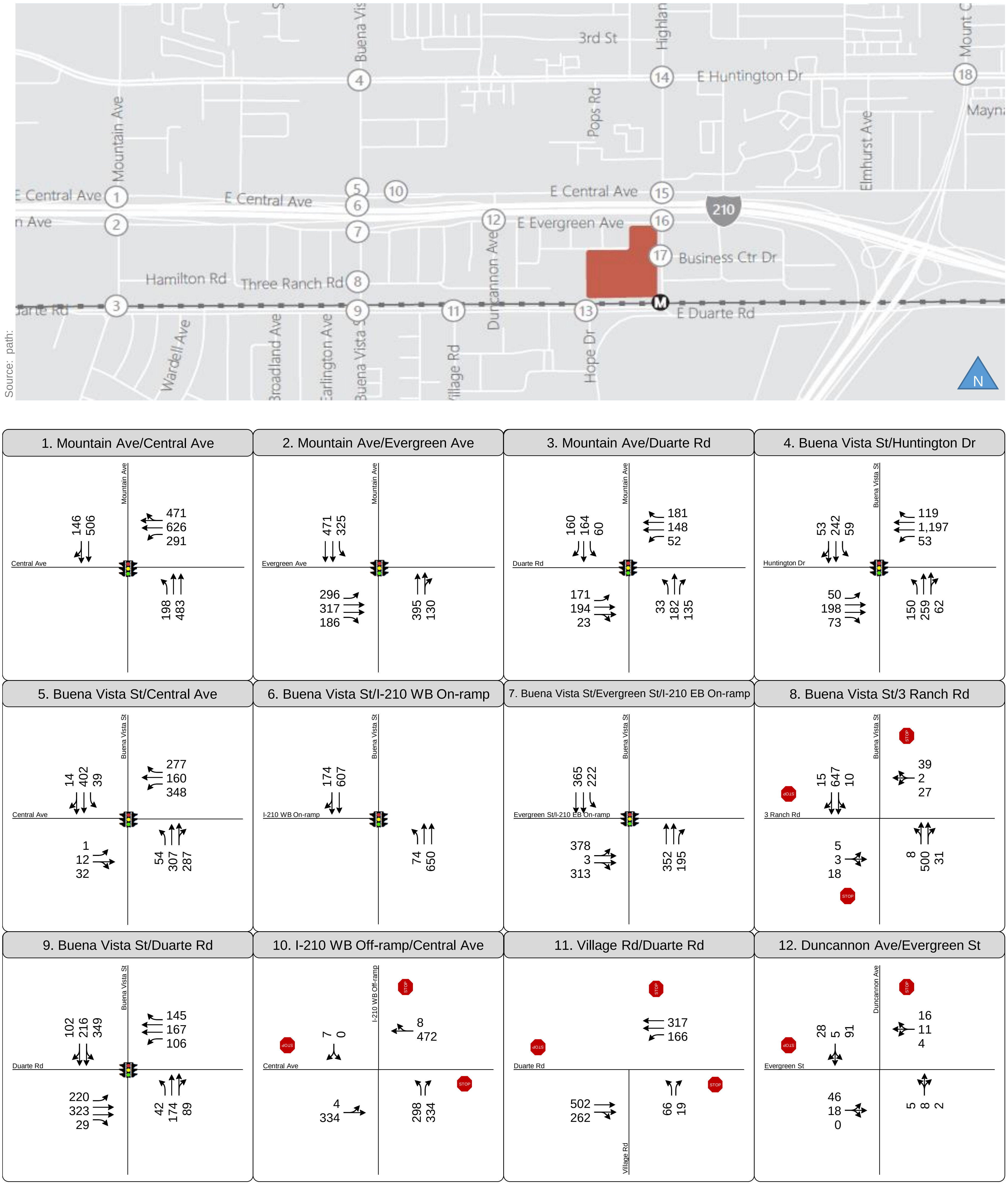


Figure 1

Peak Hour Traffic Volumes and Lane Configurations
Existing (2018) Conditions

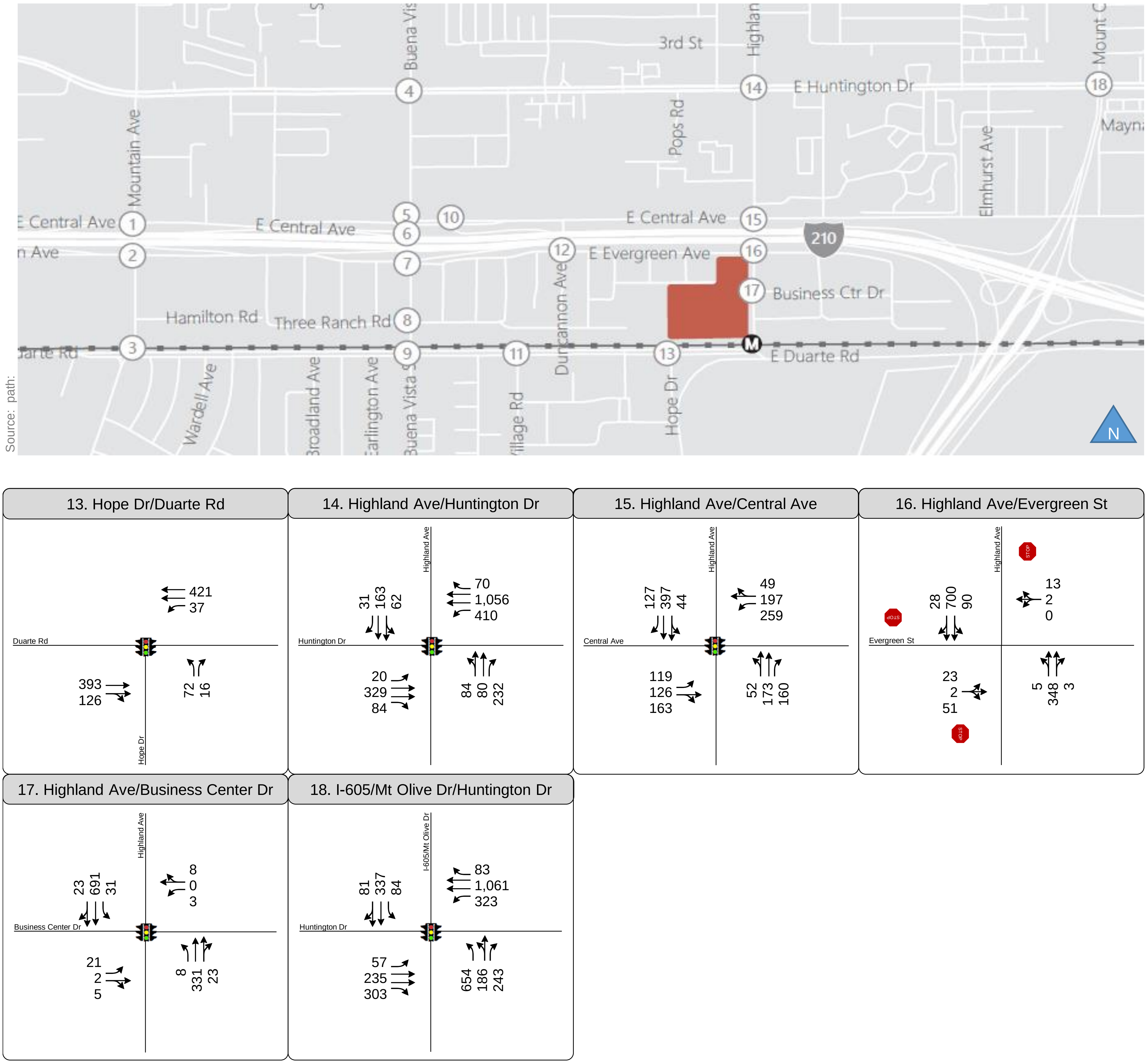


Figure 1

Peak Hour Traffic Volumes and Lane Configurations
Existing (2018) Conditions

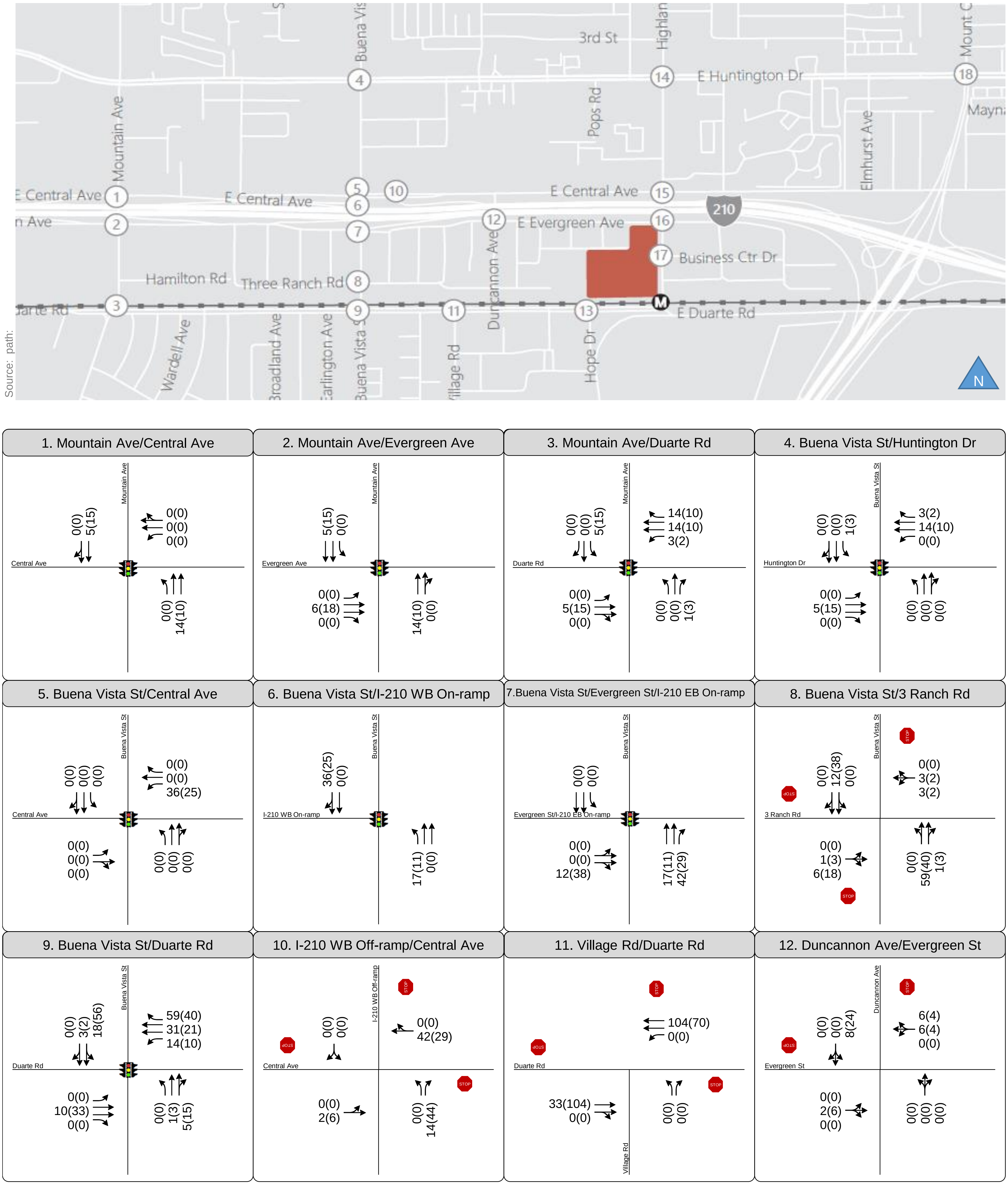


Figure 2

Peak Hour Traffic Volumes and Lane Configurations
Project Only Conditions

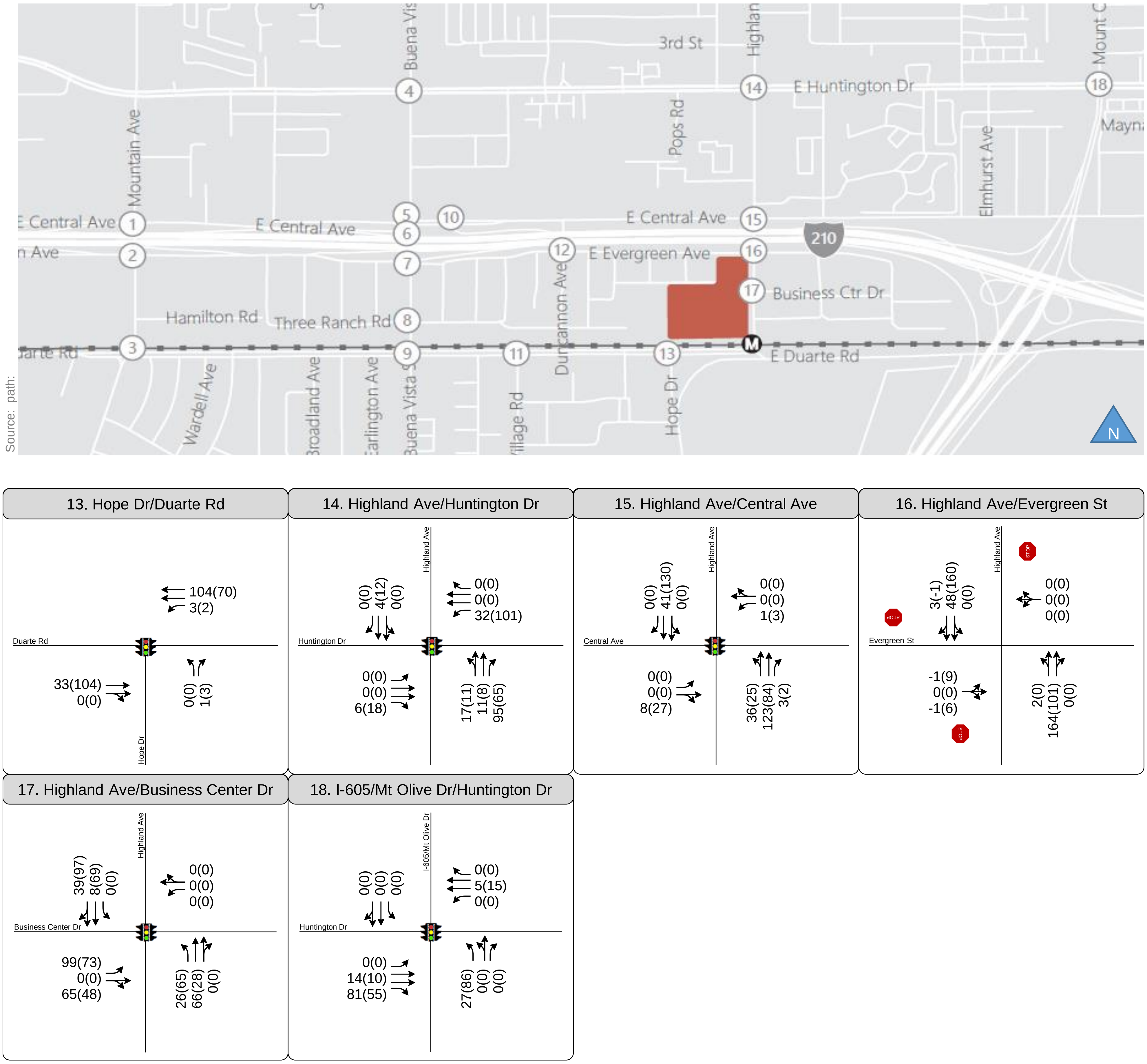


Figure 2

Peak Hour Traffic Volumes and Lane Configurations
Project Only Conditions

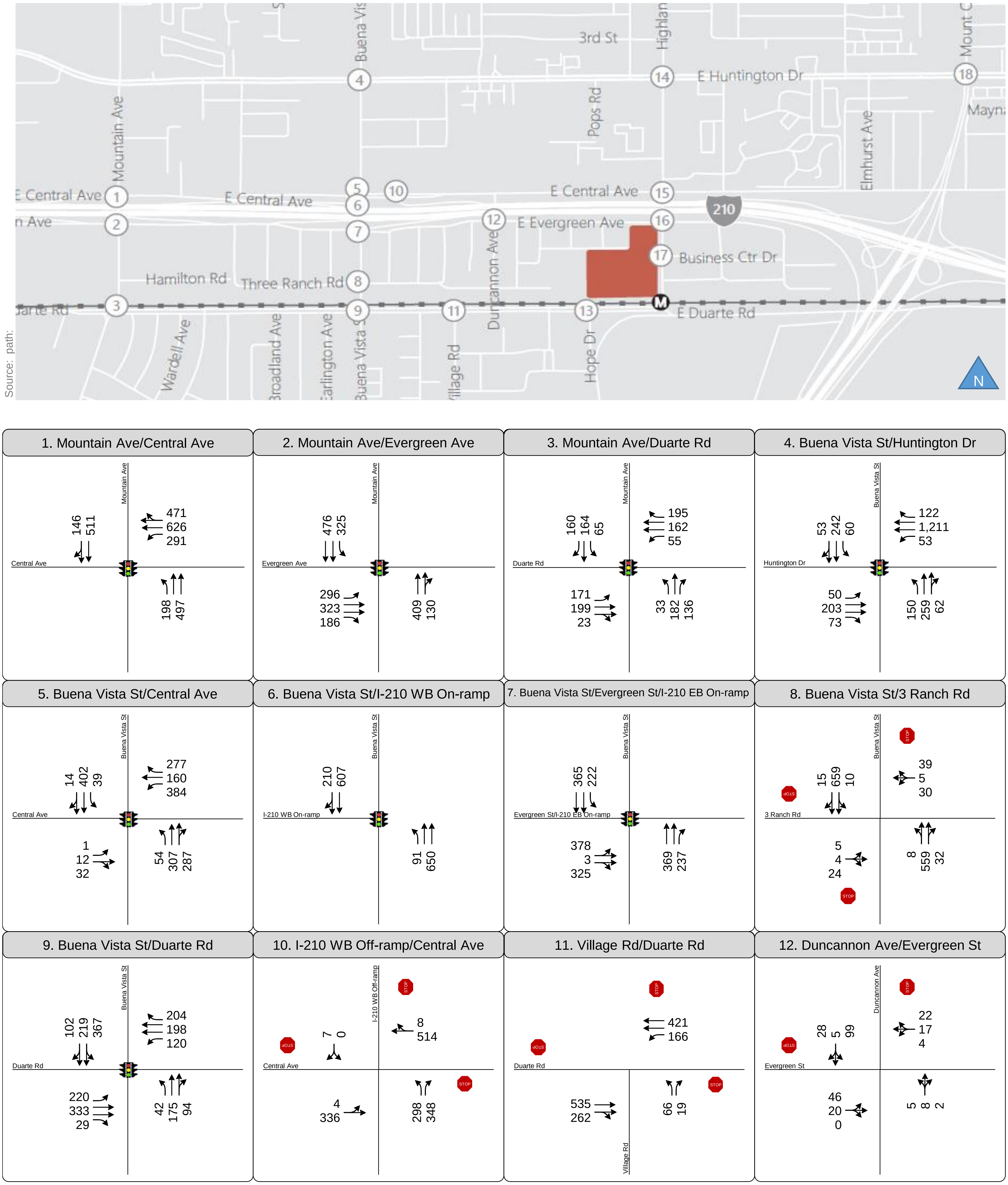


Figure 3

Peak Hour Traffic Volumes and Lane Configurations
Existing (2018) plus Project Conditions

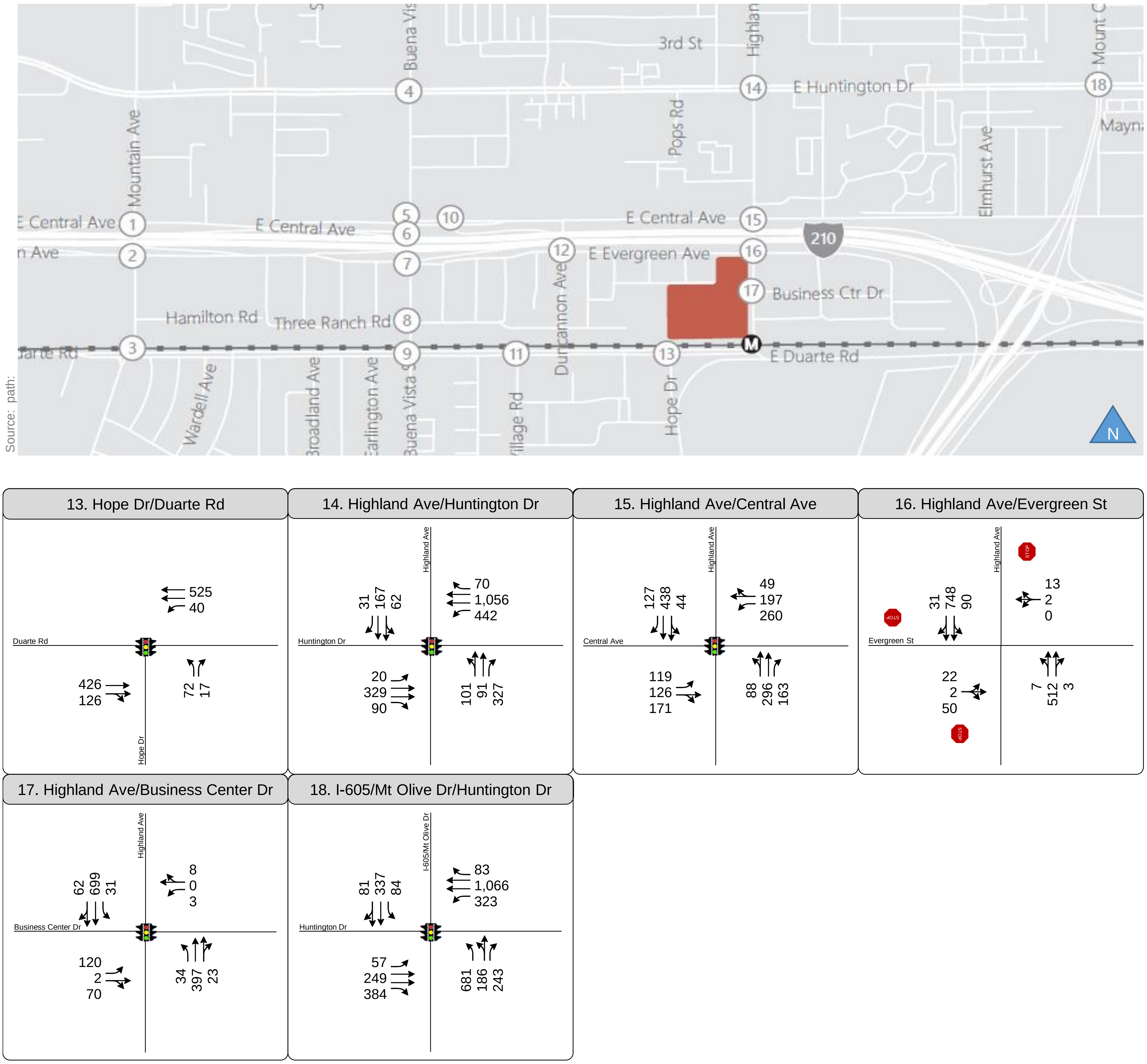


Figure 3

Peak Hour Traffic Volumes and Lane Configurations
Existing (2018) plus Project Conditions

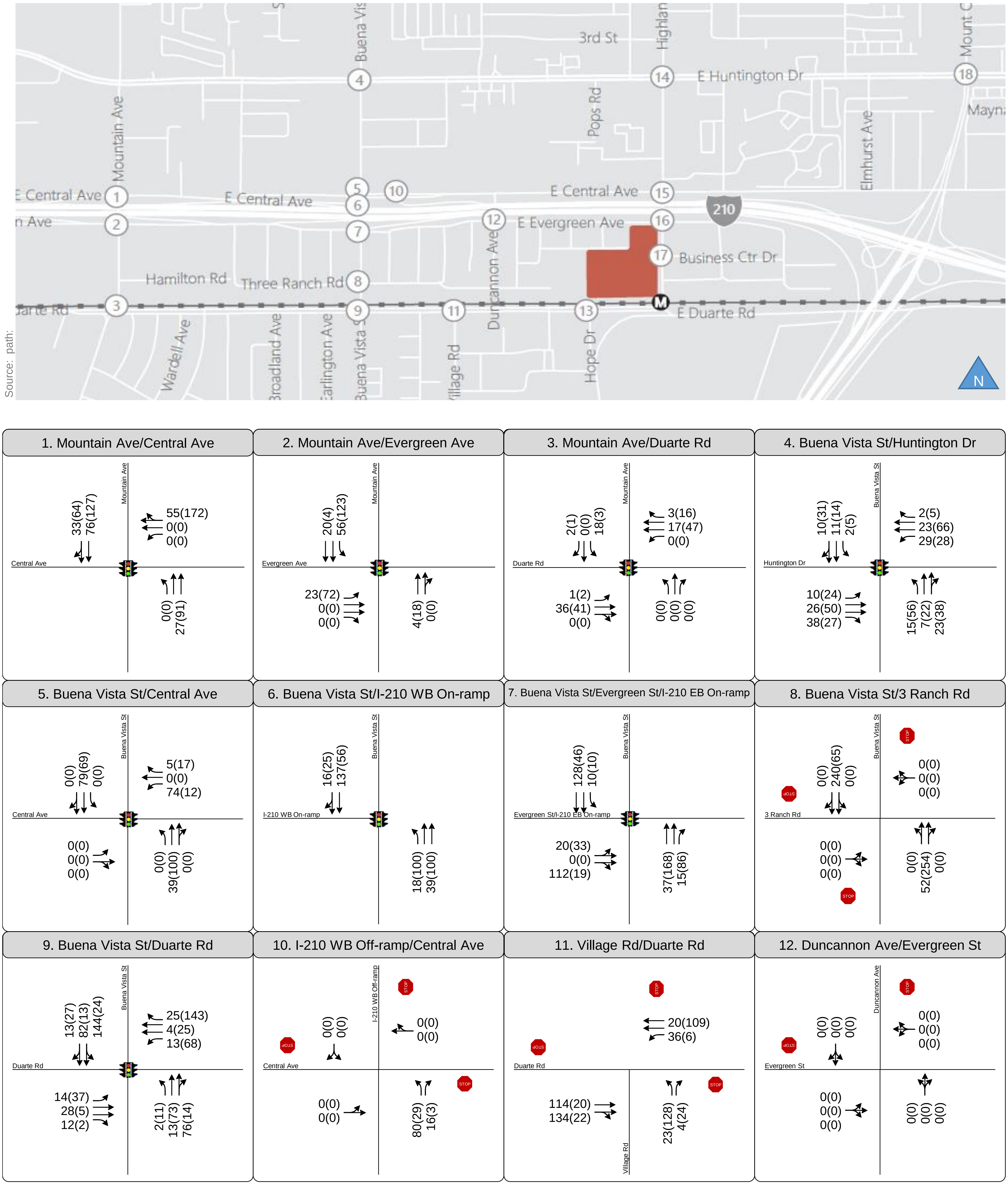


Figure 4

Peak Hour Traffic Volumes and Lane Configurations
Related Project Conditions

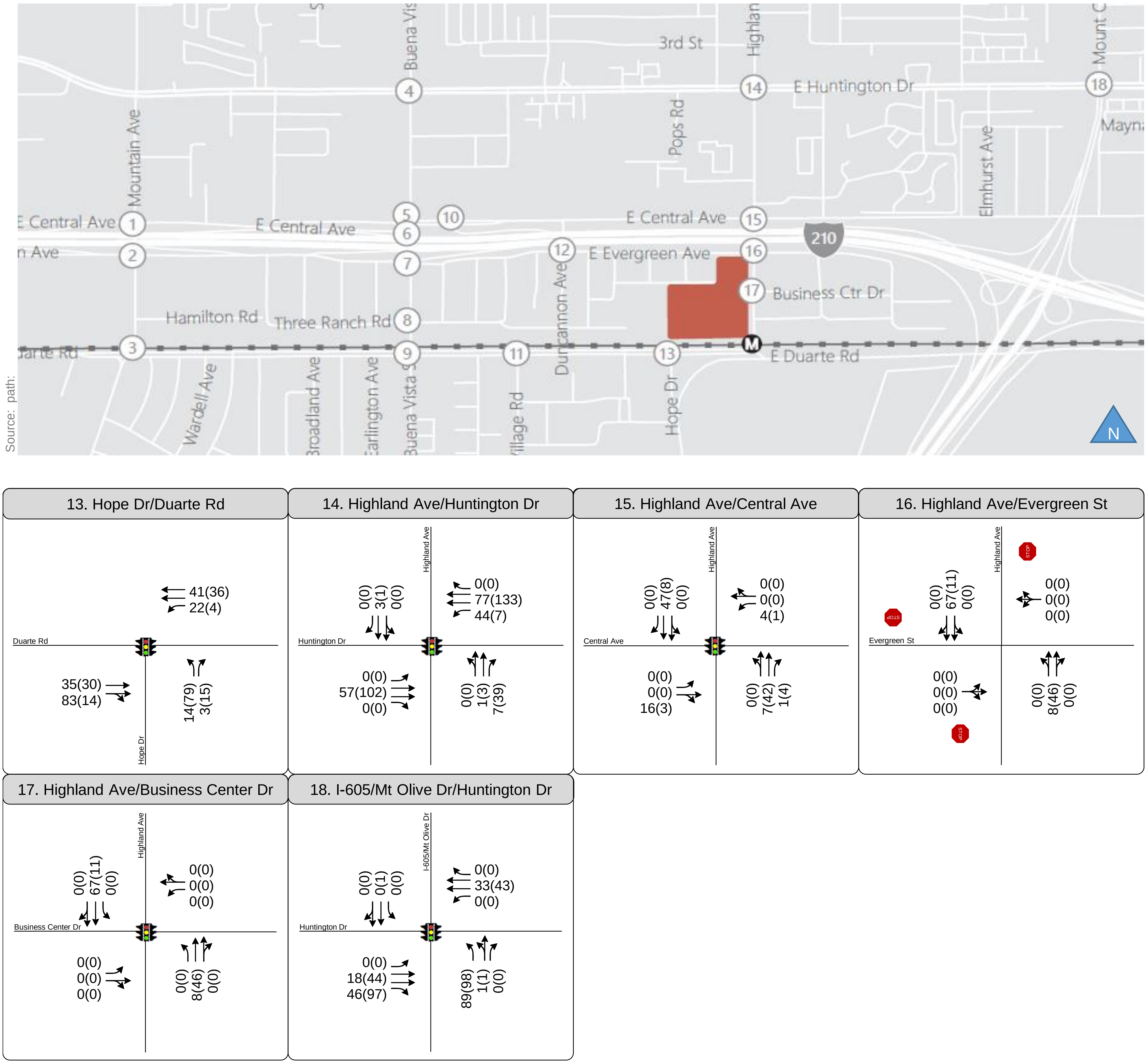


Figure 4

Peak Hour Traffic Volumes and Lane Configurations
Related Project Conditions

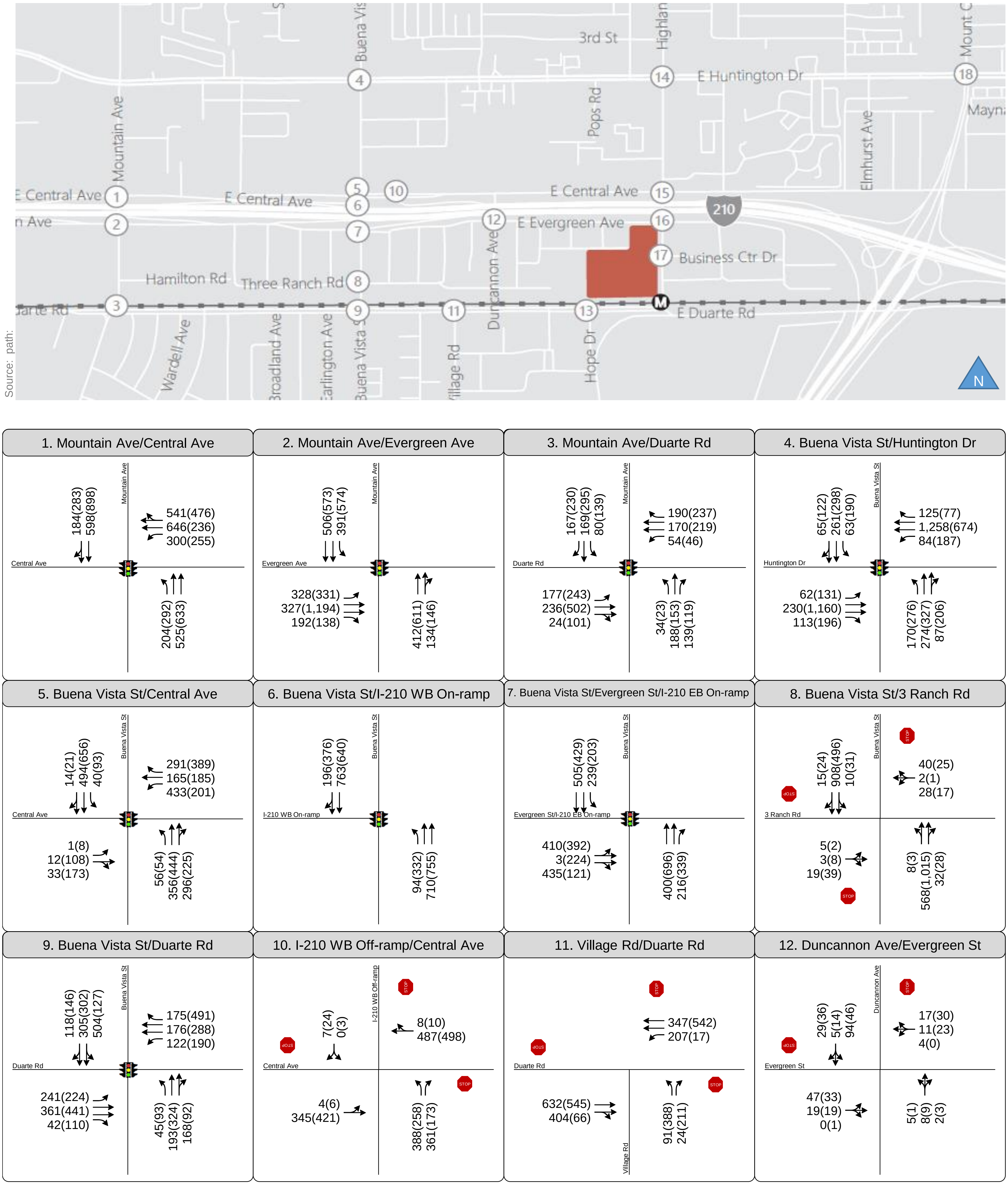


Figure 5

Peak Hour Traffic Volumes and Lane Configurations
Future Base (2025) Conditions

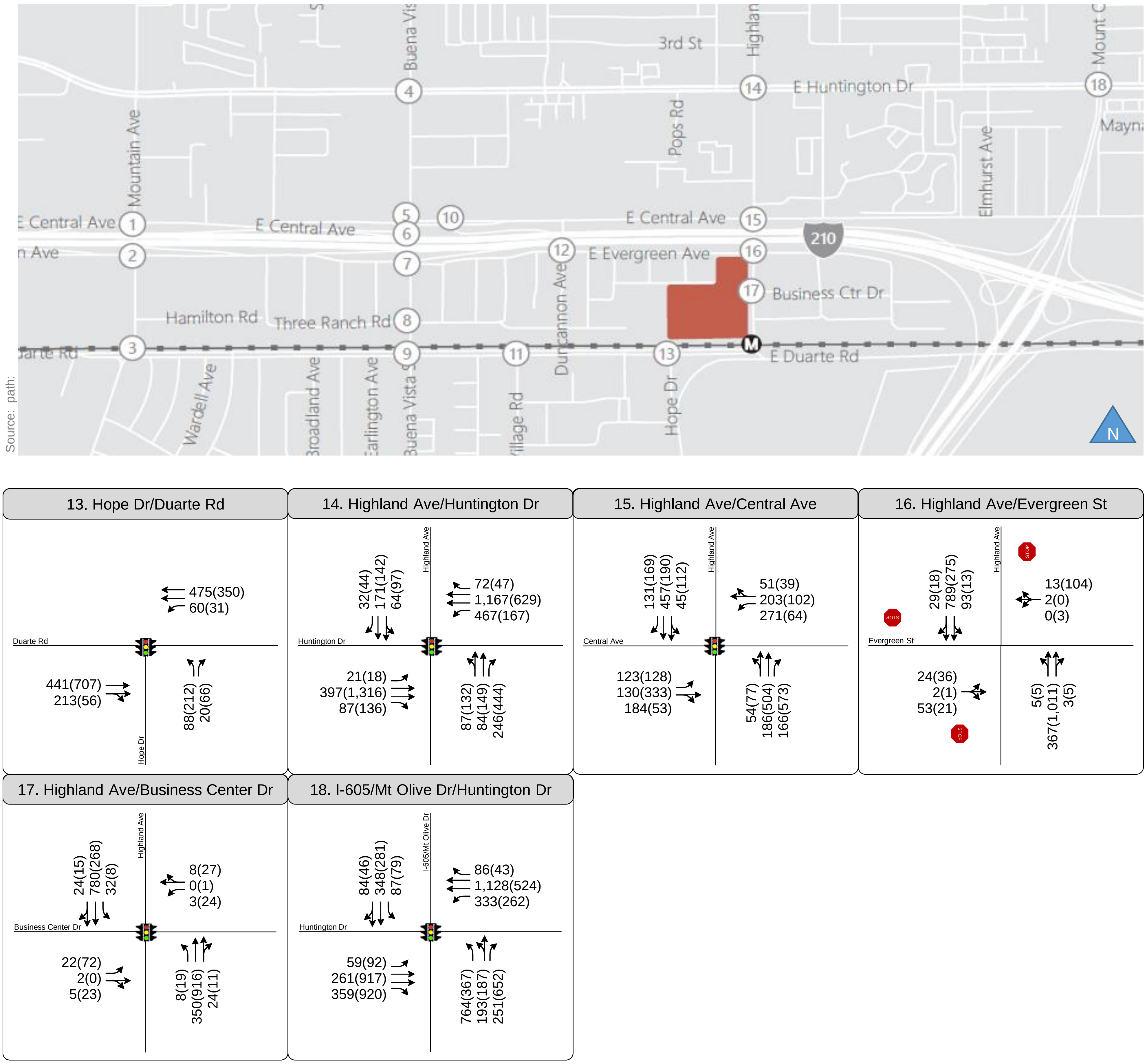


Figure 5

Peak Hour Traffic Volumes and Lane Configurations
Future Base (2025) Conditions

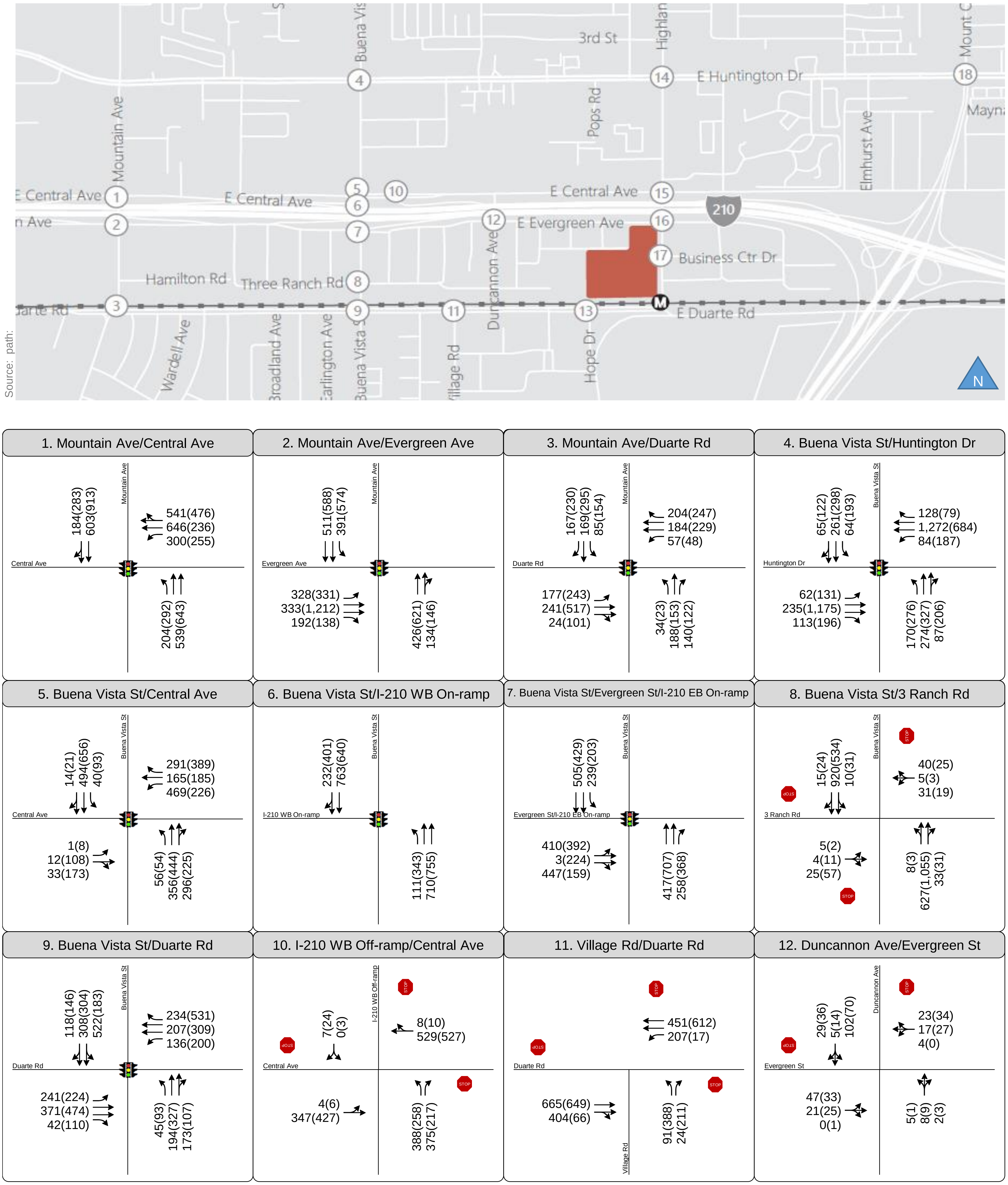


Figure 6

Peak Hour Traffic Volumes and Lane Configurations
Future (2025) plus Project Conditions

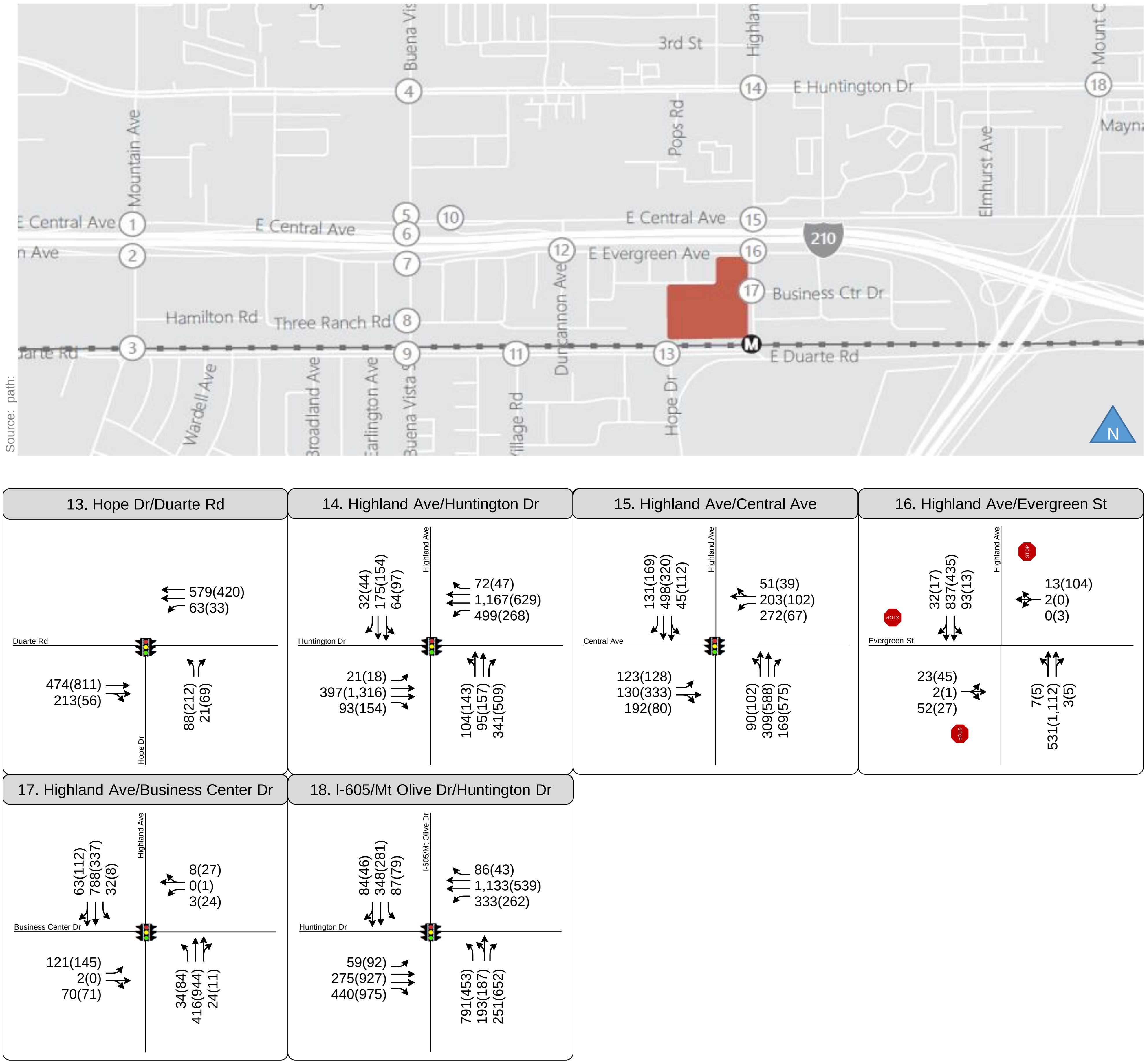


Figure 6

Peak Hour Traffic Volumes and Lane Configurations
Future (2025) plus Project Conditions

APPENDIX D: INTERSECTION LOS ANALYSIS

SIGNALIZED INTERSECTIONS LEVEL OF SERVICE

Project Title: Duarte
Intersection: 1 - Mountain Ave & Central Ave
Description: Existing

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	146	0	0.000	N-S(1):	0.151
	TH	2.00	506	3,200	0.204 *	N-S(2):	0.328 *
	LT	0.00	0	0	0.000	E-W(1):	0.182
Westbound	RT	0.00	471	0	0.000	E-W(2):	0.343 *
	TH	2.00	626	3,200	0.343 *		
	LT	1.00	291	1,600	0.182	V/C:	0.671
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	483	3,200	0.151	ITS:	0.000
	LT	1.00	198	1,600	0.124 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.771
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	212	0	0.000	N-S(1):	0.164
	TH	2.00	747	3,200	0.300 *	N-S(2):	0.477 *
	LT	0.00	0	0	0.000	E-W(1):	0.154
Westbound	RT	0.00	295	1,600	0.184 *	E-W(2):	0.184 *
	TH	2.00	229	1,600	0.143		
	LT	1.00	247	1,600	0.154	V/C:	0.661
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	525	3,200	0.164	ITS:	0.000
	LT	1.00	283	1,600	0.177 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.761
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	C

* - Denotes critical movement

Project Title: Duarte
Intersection: 2 - Mountain Ave & Evergreen Ave
Description: Existing

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.367 *
	TH	2.00	471	3,200	0.147	N-S(2):	0.147
	LT	1.00	325	1,600	0.203 *	E-W(1):	0.116
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.185 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.552
Northbound	RT	0.00	130	0	0.000	Lost Time:	0.100
	TH	2.00	395	3,200	0.164 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	1.00	186	1,600	0.116	ICU:	0.652
	TH	2.00	317	3,200	0.099		
	LT	1.00	296	1,600	0.185 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.497 *
	TH	2.00	551	3,200	0.172	N-S(2):	0.172
	LT	1.00	437	1,600	0.273 *	E-W(1):	0.362 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.157
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.859
Northbound	RT	0.00	141	0	0.000	Lost Time:	0.100
	TH	2.00	575	3,200	0.224 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	1.00	134	1,600	0.084	ICU:	0.959
	TH	2.00	1,157	3,200	0.362 *		
	LT	1.00	251	1,600	0.157	LOS:	E

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **3 - Mountain Ave & Duarte Rd**
Description: **Existing**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	N
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :	SBR, WBR			
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	160	1,067	0.000	N-S(1):	0.227 *
	TH	1.00	164	1,067	0.154	N-S(2):	0.175
	LT	1.00	60	1,067	0.056 *	E-W(1):	0.101
Westbound	RT	1.00	181	1,067	0.113 *	E-W(2):	0.273 *
	TH	2.00	148	3,200	0.046		
	LT	1.00	52	1,600	0.033	V/C:	0.500
Northbound	RT	1.00	135	1,600	0.084	Lost Time:	0.100
	TH	1.00	182	1,067	0.171 *	ITS:	0.000
	LT	1.00	33	1,600	0.021		
Eastbound	RT	0.00	23	0	0.000	ICU:	0.600
	TH	2.00	194	3,200	0.068		
	LT	1.00	171	1,067	0.160 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	222	1,067	0.000	N-S(1):	0.263
	TH	1.00	286	1,067	0.268 *	N-S(2):	0.282 *
	LT	1.00	132	1,067	0.124	E-W(1):	0.198
Westbound	RT	1.00	214	1,067	0.077 *	E-W(2):	0.296 *
	TH	2.00	167	3,200	0.052		
	LT	1.00	45	1,600	0.028	V/C:	0.578
Northbound	RT	1.00	115	1,600	0.072	Lost Time:	0.100
	TH	1.00	148	1,067	0.139	ITS:	0.000
	LT	1.00	22	1,600	0.014 *		
Eastbound	RT	0.00	98	0	0.000	ICU:	0.678
	TH	2.00	447	3,200	0.170		
	LT	1.00	234	1,067	0.219 *	LOS:	B

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **4 - Buena Vista St & Huntington Dr**
Description: **Existing**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	53	0	0.000		N-S(1):	0.137
	TH	2.00	242	3,200	0.092	*	N-S(2):	0.186 *
	LT	1.00	59	1,600	0.037		E-W(1):	0.095
Westbound	RT	1.00	119	1,600	0.056		E-W(2):	0.405 *
	TH	2.00	1,197	3,200	0.374	*		
	LT	1.00	53	1,600	0.033		V/C:	0.591
Northbound	RT	0.00	62	0	0.000		Lost Time:	0.100
	TH	2.00	259	3,200	0.100		ITS:	0.000
	LT	1.00	150	1,600	0.094	*		
Eastbound	RT	1.00	73	1,600	0.000		ICU:	0.691
	TH	2.00	198	3,200	0.062			
	LT	1.00	50	1,600	0.031	*	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	0.00	88	0	0.000		N-S(1):	0.255 *
	TH	2.00	275	3,200	0.113		N-S(2):	0.246
	LT	1.00	179	1,600	0.112	*	E-W(1):	0.432 *
Westbound	RT	1.00	70	1,600	0.000		E-W(2):	0.249
	TH	2.00	589	3,200	0.184			
	LT	1.00	154	1,600	0.096	*	V/C:	0.687
Northbound	RT	0.00	163	0	0.000		Lost Time:	0.100
	TH	2.00	296	3,200	0.143	*	ITS:	0.000
	LT	1.00	213	1,600	0.133			
Eastbound	RT	1.00	164	1,600	0.036		ICU:	0.787
	TH	2.00	1,076	3,200	0.336	*		
	LT	1.00	104	1,600	0.065		LOS:	C

* - Denotes critical movement

Project Title: Duarte
Intersection: 5 - Buena Vista St & Central Ave
Description: Existing

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	14	0	0.000	N-S(1):	0.210 *
	TH	2.00	402	3,200	0.130	N-S(2):	0.164
	LT	1.00	39	1,600	0.024 *	E-W(1):	0.246 *
Westbound	RT	1.00	277	1,600	0.161	E-W(2):	0.162
	TH	1.00	160	1,600	0.100		
	LT	1.00	348	1,600	0.218 *	V/C:	0.456
Northbound	RT	0.00	287	0	0.000	Lost Time:	0.100
	TH	2.00	307	3,200	0.186 *	ITS:	0.000
	LT	1.00	54	1,600	0.034		
Eastbound	RT	0.00	32	0	0.000	ICU:	0.556
	TH	1.00	12	1,600	0.028 *		
	LT	1.00	1	1,600	0.001	LOS:	A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	20	0	0.000	N-S(1):	0.228 *
	TH	2.00	569	3,200	0.184	N-S(2):	0.217
	LT	1.00	90	1,600	0.056 *	E-W(1):	0.285 *
Westbound	RT	1.00	360	1,600	0.197	E-W(2):	0.202
	TH	1.00	179	1,600	0.112		
	LT	1.00	183	1,600	0.114 *	V/C:	0.513
Northbound	RT	0.00	218	0	0.000	Lost Time:	0.100
	TH	2.00	333	3,200	0.172 *	ITS:	0.000
	LT	1.00	52	1,600	0.033		
Eastbound	RT	0.00	168	0	0.000	ICU:	0.613
	TH	1.00	105	1,600	0.171 *		
	LT	1.00	8	1,600	0.005	LOS:	B

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **6 - Buena Vista St & I-210 WB On-ramp**
Description: **Existing**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	174	0	0.000	N-S(1):	0.203
	TH	2.00	607	3,200	0.244 *	N-S(2):	0.290 *
	LT	0.00	0	0	0.000	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.290
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	650	3,200	0.203	ITS:	0.000
	LT	1.00	74	1,600	0.046 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.390
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	340	0	0.000	N-S(1):	0.198
	TH	2.00	566	3,200	0.283 *	N-S(2):	0.424 *
	LT	0.00	0	0	0.000	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.424
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	635	3,200	0.198	ITS:	0.000
	LT	1.00	225	1,600	0.141 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.524
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **7 - Buena Vista St & Evergreen St/I-210 EB On-ramp**
Description: **Existing**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.261	*
	TH	2.00	365	3,200	0.114		N-S(2):	0.114	
	LT	1.00	222	1,600	0.139	*	E-W(1):	0.198	
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.236	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000		V/C:	0.497	
Northbound	RT	1.00	195	1,600	0.122	*	Lost Time:	0.100	
	TH	2.00	352	3,200	0.110		ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	0.00	313	0	0.000		ICU:	0.597	
	TH	2.00	3	1,600	0.198				
	LT	0.00	378	1,600	0.236	*	LOS:	A	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.277	*
	TH	2.00	371	3,200	0.116		N-S(2):	0.116	
	LT	1.00	187	1,600	0.117	*	E-W(1):	0.198	
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.218	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000		V/C:	0.495	
Northbound	RT	1.00	245	1,600	0.153		Lost Time:	0.100	
	TH	2.00	512	3,200	0.160	*	ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	0.00	99	0	0.000		ICU:	0.595	
	TH	2.00	217	1,600	0.198				
	LT	0.00	348	1,600	0.218	*	LOS:	A	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **9 - Buena Vista St & Duarte Rd**
Description: **Existing**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	102	0	0.000	N-S(1):	0.450 *
	TH	2.00	216	1,067	0.298	N-S(2):	0.000
	LT	0.00	349	1,067	0.327 *	E-W(1):	0.167
Westbound	RT	1.00	145	1,067	0.000	E-W(2):	0.258 *
	TH	2.00	167	3,200	0.052 *		
	LT	1.00	106	1,600	0.066	V/C:	0.708
Northbound	RT	0.00	89	0	0.000	Lost Time:	0.100
	TH	2.00	174	2,134	0.123 *	ITS:	0.000
	LT	1.00	42	1,600	0.026		
Eastbound	RT	1.00	29	1,600	0.005	ICU:	0.808
	TH	2.00	323	3,200	0.101		
	LT	1.00	220	1,067	0.206 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	115	0	0.000	N-S(1):	0.381 *
	TH	2.00	280	1,067	0.232 *	N-S(2):	0.000
	LT	0.00	100	1,067	0.094	E-W(1):	0.206
Westbound	RT	1.00	337	1,067	0.269 *	E-W(2):	0.439 *
	TH	2.00	255	3,200	0.080		
	LT	1.00	118	1,600	0.074	V/C:	0.820
Northbound	RT	0.00	76	0	0.000	Lost Time:	0.100
	TH	2.00	243	2,134	0.149 *	ITS:	0.000
	LT	1.00	79	1,600	0.049		
Eastbound	RT	1.00	105	1,600	0.041	ICU:	0.920
	TH	2.00	422	3,200	0.132		
	LT	1.00	181	1,067	0.170 *	LOS:	E

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **13 - Hope Dr & Duarte Rd**
Description: **Existing**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.000
	TH	0.00	0	0	0.000 *	N-S(2):	0.045 *
	LT	0.00	0	0	0.000	E-W(1):	0.185 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.132
	TH	2.00	421	3,200	0.132		
	LT	1.00	37	1,600	0.023 *	V/C:	0.230
Northbound	RT	1.00	16	1,600	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	72	1,600	0.045 *		
Eastbound	RT	0.00	126	0	0.000	ICU:	0.330
	TH	2.00	393	3,200	0.162 *		
	LT	0.00	0	0	0.000	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.023
	TH	0.00	0	0	0.000 *	N-S(2):	0.081 *
	LT	0.00	0	0	0.000	E-W(1):	0.234 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.095
	TH	2.00	304	3,200	0.095		
	LT	1.00	26	1,600	0.016 *	V/C:	0.315
Northbound	RT	1.00	49	1,600	0.023	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	129	1,600	0.081 *		
Eastbound	RT	0.00	41	0	0.000	ICU:	0.415
	TH	2.00	656	3,200	0.218 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **14 - Highland Ave & Huntington Dr**
Description: **Existing**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	31	1,600	0.013	N-S(1):	0.090
	TH	2.00	163	3,200	0.040 *	N-S(2):	0.093 *
	LT	0.00	62	1,600	0.039	E-W(1):	0.359 *
Westbound	RT	1.00	70	1,600	0.024	E-W(2):	0.343
	TH	2.00	1,056	3,200	0.330		
	LT	1.00	410	1,600	0.256 *	V/C:	0.452
Northbound	RT	1.00	232	1,600	0.017	Lost Time:	0.100
	TH	2.00	80	3,200	0.051	ITS:	0.000
	LT	0.00	84	1,600	0.053 *		
Eastbound	RT	1.00	84	1,600	0.026	ICU:	0.552
	TH	2.00	329	3,200	0.103 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	43	1,600	0.022	N-S(1):	0.256 *
	TH	2.00	137	3,200	0.043	N-S(2):	0.123
	LT	0.00	94	1,600	0.059 *	E-W(1):	0.465 *
Westbound	RT	1.00	46	1,600	0.000	E-W(2):	0.161
	TH	2.00	481	3,200	0.150		
	LT	1.00	155	1,600	0.097 *	V/C:	0.721
Northbound	RT	1.00	392	1,600	0.197 *	Lost Time:	0.100
	TH	2.00	141	3,200	0.084	ITS:	0.000
	LT	0.00	128	1,600	0.080		
Eastbound	RT	1.00	132	1,600	0.043	ICU:	0.821
	TH	2.00	1,176	3,200	0.368 *		
	LT	1.00	17	1,600	0.011	LOS:	D

* - Denotes critical movement

Project Title: Duarte
Intersection: 15 - Highland Ave & Central Ave
Description: Existing

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	127	1,600	0.042		N-S(1):	0.088
	TH	2.00	397	3,200	0.089	*	N-S(2):	0.122 *
	LT	0.00	44	1,600	0.028		E-W(1):	0.343 *
Westbound	RT	0.00	49	0	0.000		E-W(2):	0.228
	TH	1.00	197	1,600	0.154			
	LT	1.00	259	1,600	0.162	*	V/C:	0.465
Northbound	RT	1.00	160	1,600	0.019		Lost Time:	0.100
	TH	2.00	173	3,200	0.060		ITS:	0.000
	LT	0.00	52	1,600	0.033	*		
Eastbound	RT	0.00	163	0	0.000		ICU:	0.565
	TH	1.00	126	1,600	0.181	*		
	LT	1.00	119	1,600	0.074		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	164	1,600	0.064		N-S(1):	0.393 *
	TH	2.00	176	3,200	0.070		N-S(2):	0.117
	LT	0.00	109	1,600	0.068	*	E-W(1):	0.270 *
Westbound	RT	0.00	38	0	0.000		E-W(2):	0.164
	TH	1.00	99	1,600	0.086			
	LT	1.00	61	1,600	0.038	*	V/C:	0.663
Northbound	RT	1.00	551	1,600	0.325	*	Lost Time:	0.100
	TH	2.00	448	3,200	0.163		ITS:	0.000
	LT	0.00	75	1,600	0.047			
Eastbound	RT	0.00	48	0	0.000		ICU:	0.763
	TH	1.00	323	1,600	0.232	*		
	LT	1.00	124	1,600	0.078		LOS:	C

* - Denotes critical movement

Project Title: Duarte
Intersection: 17 - Highland Ave & Business Center Dr
Description: Existing

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : Y
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	23	0	0.000	N-S(1):	0.130
	TH	2.00	691	3,200	0.223 *	N-S(2):	0.228 *
	LT	1.00	31	1,600	0.019	E-W(1):	0.018 *
Westbound	RT	0.00	8	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.005 *		
	LT	1.00	3	1,600	0.002	V/C:	0.246
Northbound	RT	0.00	23	0	0.000	Lost Time:	0.100
	TH	2.00	331	3,200	0.111	ITS:	0.000
	LT	1.00	8	1,600	0.005 *		
Eastbound	RT	0.00	5	0	0.000	ICU:	0.346
	TH	1.00	2	1,600	0.004		
	LT	1.00	21	1,600	0.013 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	15	0	0.000	N-S(1):	0.272 *
	TH	2.00	249	3,200	0.083	N-S(2):	0.094
	LT	1.00	8	1,600	0.005 *	E-W(1):	0.061 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.000
	TH	1.00	1	1,600	0.017 *		
	LT	1.00	23	1,600	0.014	V/C:	0.333
Northbound	RT	0.00	11	0	0.000	Lost Time:	0.100
	TH	2.00	843	3,200	0.267 *	ITS:	0.000
	LT	1.00	18	1,600	0.011		
Eastbound	RT	0.00	22	0	0.000	ICU:	0.433
	TH	1.00	0	1,600	0.014		
	LT	1.00	70	1,600	0.044 *	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **18 - I-605/Mt Olive Dr & Huntington Dr**
Description: **Existing**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : Y
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	81	0	0.000	N-S(1):	0.423 *
	TH	2.00	337	3,200	0.131 *	N-S(2):	0.000
	LT	1.00	84	1,600	0.053	E-W(1):	0.275
Westbound	RT	1.00	83	1,600	0.026	E-W(2):	0.368 *
	TH	2.00	1,061	3,200	0.332 *		
	LT	1.00	323	1,600	0.202	V/C:	0.791
Northbound	RT	1.00	243	1,600	0.051	Lost Time:	0.100
	TH	0.44	186	709	0.263	ITS:	0.000
	LT	1.56	654	2,242	0.292 *		
Eastbound	RT	1.00	303	1,600	0.044	ICU:	0.891
	TH	2.00	235	3,200	0.073		
	LT	1.00	57	1,600	0.036 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	45	0	0.000	N-S(1):	0.415 *
	TH	2.00	271	3,200	0.099 *	N-S(2):	0.000
	LT	1.00	77	1,600	0.048	E-W(1):	0.581 *
Westbound	RT	1.00	42	1,600	0.002	E-W(2):	0.202
	TH	2.00	466	3,200	0.146		
	LT	1.00	254	1,600	0.159 *	V/C:	0.996
Northbound	RT	1.00	632	1,600	0.316 *	Lost Time:	0.100
	TH	0.82	180	1,306	0.138	ITS:	0.000
	LT	1.18	261	1,704	0.153		
Eastbound	RT	1.00	797	1,600	0.422 *	ICU:	1.096
	TH	2.00	846	3,200	0.264		
	LT	1.00	89	1,600	0.056	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **1 - Mountain Ave & Central Ave**
Description: **Existing plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	146	0	0.000	N-S(1):	0.155
	TH	2.00	511	3,200	0.205 *	N-S(2):	0.329 *
	LT	0.00	0	0	0.000	E-W(1):	0.182
Westbound	RT	0.00	471	0	0.000	E-W(2):	0.343 *
	TH	2.00	626	3,200	0.343 *		
	LT	1.00	291	1,600	0.182	V/C:	0.672
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	497	3,200	0.155	ITS:	0.000
	LT	1.00	198	1,600	0.124 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.772
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	212	0	0.000	N-S(1):	0.167
	TH	2.00	762	3,200	0.304 *	N-S(2):	0.481 *
	LT	0.00	0	0	0.000	E-W(1):	0.154
Westbound	RT	0.00	295	1,600	0.184 *	E-W(2):	0.184 *
	TH	2.00	229	1,600	0.143		
	LT	1.00	247	1,600	0.154	V/C:	0.665
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	535	3,200	0.167	ITS:	0.000
	LT	1.00	283	1,600	0.177 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.765
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	C

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **2 - Mountain Ave & Evergreen Ave**
Description: **Existing plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.371	*
	TH	2.00	476	3,200	0.149		N-S(2):	0.149	
	LT	1.00	325	1,600	0.203	*	E-W(1):	0.116	
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.185	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000		V/C:	0.556	
Northbound	RT	0.00	130	0	0.000		Lost Time:	0.100	
	TH	2.00	409	3,200	0.168	*	ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	1.00	186	1,600	0.116		ICU:	0.656	
	TH	2.00	323	3,200	0.101				
	LT	1.00	296	1,600	0.185	*	LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.500	*
	TH	2.00	566	3,200	0.177		N-S(2):	0.177	
	LT	1.00	437	1,600	0.273	*	E-W(1):	0.367	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.157	
	TH	0.00	0	0	0.000				
	LT	0.00	0	0	0.000	*	V/C:	0.867	
Northbound	RT	0.00	141	0	0.000		Lost Time:	0.100	
	TH	2.00	585	3,200	0.227	*	ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	1.00	134	1,600	0.084		ICU:	0.967	
	TH	2.00	1,175	3,200	0.367	*			
	LT	1.00	251	1,600	0.157		LOS:	E	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **3 - Mountain Ave & Duarte Rd**
Description: **Existing plus Project**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	N
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :	SBR, WBR			
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	1.00	160	1,067	0.000		N-S(1):	0.232	*
	TH	1.00	164	1,067	0.154		N-S(2):	0.175	
	LT	1.00	65	1,067	0.061	*	E-W(1):	0.103	
Westbound	RT	1.00	195	1,067	0.122	*	E-W(2):	0.282	*
	TH	2.00	162	3,200	0.051				
	LT	1.00	55	1,600	0.034		V/C:	0.514	
Northbound	RT	1.00	136	1,600	0.085		Lost Time:	0.100	
	TH	1.00	182	1,067	0.171	*	ITS:	0.000	
	LT	1.00	33	1,600	0.021				
Eastbound	RT	0.00	23	0	0.000		ICU:	0.614	
	TH	2.00	199	3,200	0.069				
	LT	1.00	171	1,067	0.160	*	LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	1.00	222	1,067	0.000		N-S(1):	0.277	
	TH	1.00	286	1,067	0.268	*	N-S(2):	0.282	*
	LT	1.00	147	1,067	0.138		E-W(1):	0.204	
Westbound	RT	1.00	224	1,067	0.072	*	E-W(2):	0.291	*
	TH	2.00	177	3,200	0.055				
	LT	1.00	47	1,600	0.029		V/C:	0.573	
Northbound	RT	1.00	118	1,600	0.074		Lost Time:	0.100	
	TH	1.00	148	1,067	0.139		ITS:	0.000	
	LT	1.00	22	1,600	0.014	*			
Eastbound	RT	0.00	98	0	0.000		ICU:	0.673	
	TH	2.00	462	3,200	0.175				
	LT	1.00	234	1,067	0.219	*	LOS:	B	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **4 - Buena Vista St & Huntington Dr**
Description: **Existing plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	53	0	0.000	N-S(1):	0.138
	TH	2.00	242	3,200	0.092 *	N-S(2):	0.186 *
	LT	1.00	60	1,600	0.038	E-W(1):	0.096
Westbound	RT	1.00	122	1,600	0.058	E-W(2):	0.409 *
	TH	2.00	1,211	3,200	0.378 *		
	LT	1.00	53	1,600	0.033	V/C:	0.595
Northbound	RT	0.00	62	0	0.000	Lost Time:	0.100
	TH	2.00	259	3,200	0.100	ITS:	0.000
	LT	1.00	150	1,600	0.094 *		
Eastbound	RT	1.00	73	1,600	0.000	ICU:	0.695
	TH	2.00	203	3,200	0.063		
	LT	1.00	50	1,600	0.031 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	88	0	0.000	N-S(1):	0.257 *
	TH	2.00	275	3,200	0.113	N-S(2):	0.246
	LT	1.00	182	1,600	0.114 *	E-W(1):	0.437 *
Westbound	RT	1.00	72	1,600	0.000	E-W(2):	0.252
	TH	2.00	599	3,200	0.187		
	LT	1.00	154	1,600	0.096 *	V/C:	0.694
Northbound	RT	0.00	163	0	0.000	Lost Time:	0.100
	TH	2.00	296	3,200	0.143 *	ITS:	0.000
	LT	1.00	213	1,600	0.133		
Eastbound	RT	1.00	164	1,600	0.036	ICU:	0.794
	TH	2.00	1,091	3,200	0.341 *		
	LT	1.00	104	1,600	0.065	LOS:	C

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **5 - Buena Vista St & Central Ave**
Description: **Existing plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	14	0	0.000		N-S(1):	0.210	*
	TH	2.00	402	3,200	0.130		N-S(2):	0.164	
	LT	1.00	39	1,600	0.024	*	E-W(1):	0.268	*
Westbound	RT	1.00	277	1,600	0.161		E-W(2):	0.162	
	TH	1.00	160	1,600	0.100				
	LT	1.00	384	1,600	0.240	*	V/C:	0.478	
Northbound	RT	0.00	287	0	0.000		Lost Time:	0.100	
	TH	2.00	307	3,200	0.186	*	ITS:	0.000	
	LT	1.00	54	1,600	0.034				
Eastbound	RT	0.00	32	0	0.000		ICU:	0.578	
	TH	1.00	12	1,600	0.028	*			
	LT	1.00	1	1,600	0.001		LOS:	A	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	20	0	0.000		N-S(1):	0.228	*
	TH	2.00	569	3,200	0.184		N-S(2):	0.217	
	LT	1.00	90	1,600	0.056	*	E-W(1):	0.301	*
Westbound	RT	1.00	360	1,600	0.197		E-W(2):	0.202	
	TH	1.00	179	1,600	0.112				
	LT	1.00	208	1,600	0.130	*	V/C:	0.529	
Northbound	RT	0.00	218	0	0.000		Lost Time:	0.100	
	TH	2.00	333	3,200	0.172	*	ITS:	0.000	
	LT	1.00	52	1,600	0.033				
Eastbound	RT	0.00	168	0	0.000		ICU:	0.629	
	TH	1.00	105	1,600	0.171	*			
	LT	1.00	8	1,600	0.005		LOS:	B	

* - Denotes critical movement

Project Title: Duarte
Intersection: 6 - Buena Vista St & I-210 WB On-ramp
Description: Existing plus Project

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	210	0	0.000	N-S(1):	0.203
	TH	2.00	607	3,200	0.255 *	N-S(2):	0.312 *
	LT	0.00	0	0	0.000	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.312
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	650	3,200	0.203	ITS:	0.000
	LT	1.00	91	1,600	0.057 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.412
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	LOS:	A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	365	0	0.000	N-S(1):	0.198
	TH	2.00	566	3,200	0.291 *	N-S(2):	0.439 *
	LT	0.00	0	0	0.000	E-W(1):	0.000 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.000 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	V/C:	0.439
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	635	3,200	0.198	ITS:	0.000
	LT	1.00	236	1,600	0.148 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.539
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **7 - Buena Vista St & Evergreen St/I-210 EB On-ramp**
Description: **Existing plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.287	*
	TH	2.00	365	3,200	0.114		N-S(2):	0.114	
	LT	1.00	222	1,600	0.139	*	E-W(1):	0.205	
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.236	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000		V/C:	0.523	
Northbound	RT	1.00	237	1,600	0.148	*	Lost Time:	0.100	
	TH	2.00	369	3,200	0.115		ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	0.00	325	0	0.000		ICU:	0.623	
	TH	2.00	3	1,600	0.205				
	LT	0.00	378	1,600	0.236	*	LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.288	*
	TH	2.00	371	3,200	0.116		N-S(2):	0.116	
	LT	1.00	187	1,600	0.117	*	E-W(1):	0.219	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.218	
	TH	0.00	0	0	0.000				
	LT	0.00	0	0	0.000	*	V/C:	0.507	
Northbound	RT	1.00	274	1,600	0.171	*	Lost Time:	0.100	
	TH	2.00	523	3,200	0.163		ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	0.00	137	0	0.000		ICU:	0.607	
	TH	2.00	217	1,600	0.219	*			
	LT	0.00	348	1,600	0.218		LOS:	B	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **9 - Buena Vista St & Duarte Rd**
Description: **Existing plus Project**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	102	0	0.000	N-S(1):	0.470 *
	TH	2.00	219	1,067	0.301	N-S(2):	0.000
	LT	0.00	367	1,067	0.344 *	E-W(1):	0.179
Westbound	RT	1.00	204	1,067	0.019	E-W(2):	0.268 *
	TH	2.00	198	3,200	0.062 *		
	LT	1.00	120	1,600	0.075	V/C:	0.738
Northbound	RT	0.00	94	0	0.000	Lost Time:	0.100
	TH	2.00	175	2,134	0.126 *	ITS:	0.000
	LT	1.00	42	1,600	0.026		
Eastbound	RT	1.00	29	1,600	0.005	ICU:	0.838
	TH	2.00	333	3,200	0.104		
	LT	1.00	220	1,067	0.206 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	115	0	0.000	N-S(1):	0.417 *
	TH	2.00	282	1,067	0.259 *	N-S(2):	0.000
	LT	0.00	156	1,067	0.146	E-W(1):	0.222
Westbound	RT	1.00	377	1,067	0.280 *	E-W(2):	0.450 *
	TH	2.00	276	3,200	0.086		
	LT	1.00	128	1,600	0.080	V/C:	0.867
Northbound	RT	0.00	91	0	0.000	Lost Time:	0.100
	TH	2.00	246	2,134	0.158 *	ITS:	0.000
	LT	1.00	79	1,600	0.049		
Eastbound	RT	1.00	105	1,600	0.041	ICU:	0.967
	TH	2.00	455	3,200	0.142		
	LT	1.00	181	1,067	0.170 *	LOS:	E

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **13 - Hope Dr & Duarte Rd**
Description: **Existing plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.000
	TH	0.00	0	0	0.000 *	N-S(2):	0.045 *
	LT	0.00	0	0	0.000	E-W(1):	0.198 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.164
	TH	2.00	525	3,200	0.164		
	LT	1.00	40	1,600	0.025 *	V/C:	0.243
Northbound	RT	1.00	17	1,600	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	72	1,600	0.045 *		
Eastbound	RT	0.00	126	0	0.000	ICU:	0.343
	TH	2.00	426	3,200	0.173 *		
	LT	0.00	0	0	0.000	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.024
	TH	0.00	0	0	0.000 *	N-S(2):	0.081 *
	LT	0.00	0	0	0.000	E-W(1):	0.268 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.117
	TH	2.00	374	3,200	0.117		
	LT	1.00	28	1,600	0.018 *	V/C:	0.349
Northbound	RT	1.00	52	1,600	0.024	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	129	1,600	0.081 *		
Eastbound	RT	0.00	41	0	0.000	ICU:	0.449
	TH	2.00	760	3,200	0.250 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **14 - Highland Ave & Huntington Dr**
Description: **Existing plus Project**

Thru Lane:	1600 vph	
Left Lane:	1600 vph	
Double Lt Penalty:	10 %	
ITS:	0 %	
OLA Movements :		
FF Movements:		

N-S Split Phase :	N
E-W Split Phase :	N
Lost Time (% of cycle) :	10
V/C Round Off (decs.) :	3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	31	1,600	0.013	N-S(1):	0.105 *
	TH	2.00	167	3,200	0.041	N-S(2):	0.104
	LT	0.00	62	1,600	0.039 *	E-W(1):	0.379 *
Westbound	RT	1.00	70	1,600	0.024	E-W(2):	0.343
	TH	2.00	1,056	3,200	0.330		
	LT	1.00	442	1,600	0.276 *	V/C:	0.484
Northbound	RT	1.00	327	1,600	0.066 *	Lost Time:	0.100
	TH	2.00	91	3,200	0.060	ITS:	0.000
	LT	0.00	101	1,600	0.063		
Eastbound	RT	1.00	90	1,600	0.025	ICU:	0.584
	TH	2.00	329	3,200	0.103 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	43	1,600	0.022	N-S(1):	0.265 *
	TH	2.00	149	3,200	0.045	N-S(2):	0.132
	LT	0.00	94	1,600	0.059 *	E-W(1):	0.528 *
Westbound	RT	1.00	46	1,600	0.000	E-W(2):	0.161
	TH	2.00	481	3,200	0.150		
	LT	1.00	256	1,600	0.160 *	V/C:	0.793
Northbound	RT	1.00	457	1,600	0.206 *	Lost Time:	0.100
	TH	2.00	149	3,200	0.090	ITS:	0.000
	LT	0.00	139	1,600	0.087		
Eastbound	RT	1.00	150	1,600	0.050	ICU:	0.893
	TH	2.00	1,176	3,200	0.368 *		
	LT	1.00	17	1,600	0.011	LOS:	D

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **15 - Highland Ave & Central Ave**
Description: **Existing plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	127	1,600	0.042	N-S(1):	0.113
	TH	2.00	438	3,200	0.095 *	N-S(2):	0.150 *
	LT	0.00	44	1,600	0.028	E-W(1):	0.349 *
Westbound	RT	0.00	49	0	0.000	E-W(2):	0.228
	TH	1.00	197	1,600	0.154		
	LT	1.00	260	1,600	0.163 *	V/C:	0.499
Northbound	RT	1.00	163	1,600	0.021	Lost Time:	0.100
	TH	2.00	296	3,200	0.085	ITS:	0.000
	LT	0.00	88	1,600	0.055 *		
Eastbound	RT	0.00	171	0	0.000	ICU:	0.599
	TH	1.00	126	1,600	0.186 *		
	LT	1.00	119	1,600	0.074	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	164	1,600	0.064	N-S(1):	0.394 *
	TH	2.00	306	3,200	0.090	N-S(2):	0.153
	LT	0.00	109	1,600	0.068 *	E-W(1):	0.289 *
Westbound	RT	0.00	38	0	0.000	E-W(2):	0.164
	TH	1.00	99	1,600	0.086		
	LT	1.00	64	1,600	0.040 *	V/C:	0.683
Northbound	RT	1.00	553	1,600	0.326 *	Lost Time:	0.100
	TH	2.00	532	3,200	0.185	ITS:	0.000
	LT	0.00	100	1,600	0.063		
Eastbound	RT	0.00	75	0	0.000	ICU:	0.783
	TH	1.00	323	1,600	0.249 *		
	LT	1.00	124	1,600	0.078	LOS:	C

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **17 - Highland Ave & Business Center Dr**
Description: **Existing plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	62	0	0.000	N-S(1):	0.150
	TH	2.00	699	3,200	0.238 *	N-S(2):	0.259 *
	LT	1.00	31	1,600	0.019	E-W(1):	0.080 *
Westbound	RT	0.00	8	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.005 *		
	LT	1.00	3	1,600	0.002	V/C:	0.339
Northbound	RT	0.00	23	0	0.000	Lost Time:	0.100
	TH	2.00	397	3,200	0.131	ITS:	0.000
	LT	1.00	34	1,600	0.021 *		
Eastbound	RT	0.00	70	0	0.000	ICU:	0.439
	TH	1.00	2	1,600	0.045		
	LT	1.00	120	1,600	0.075 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	112	0	0.000	N-S(1):	0.281 *
	TH	2.00	318	3,200	0.134	N-S(2):	0.186
	LT	1.00	8	1,600	0.005 *	E-W(1):	0.106 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.000
	TH	1.00	1	1,600	0.017 *		
	LT	1.00	23	1,600	0.014	V/C:	0.387
Northbound	RT	0.00	11	0	0.000	Lost Time:	0.100
	TH	2.00	871	3,200	0.276 *	ITS:	0.000
	LT	1.00	83	1,600	0.052		
Eastbound	RT	0.00	70	0	0.000	ICU:	0.487
	TH	1.00	0	1,600	0.044		
	LT	1.00	143	1,600	0.089 *	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **18 - I-605/Mt Olive Dr & Huntington Dr**
Description: **Existing plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	81	0	0.000		N-S(1):	0.432	*
	TH	2.00	337	3,200	0.131	*	N-S(2):	0.000	
	LT	1.00	84	1,600	0.053		E-W(1):	0.291	
Westbound	RT	1.00	83	1,600	0.026		E-W(2):	0.369	*
	TH	2.00	1,066	3,200	0.333	*			
	LT	1.00	323	1,600	0.202		V/C:	0.801	
Northbound	RT	1.00	243	1,600	0.051		Lost Time:	0.100	
	TH	0.43	186	687	0.271		ITS:	0.000	
	LT	1.57	681	2,262	0.301	*			
Eastbound	RT	1.00	384	1,600	0.089		ICU:	0.901	
	TH	2.00	249	3,200	0.078				
	LT	1.00	57	1,600	0.036	*	LOS:	E	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	45	0	0.000		N-S(1):	0.415	*
	TH	2.00	271	3,200	0.099	*	N-S(2):	0.000	
	LT	1.00	77	1,600	0.048		E-W(1):	0.600	*
Westbound	RT	1.00	42	1,600	0.002		E-W(2):	0.206	
	TH	2.00	481	3,200	0.150				
	LT	1.00	254	1,600	0.159	*	V/C:	1.015	
Northbound	RT	1.00	632	1,600	0.316	*	Lost Time:	0.100	
	TH	0.68	180	1,093	0.165		ITS:	0.000	
	LT	1.32	347	1,896	0.183				
Eastbound	RT	1.00	852	1,600	0.441	*	ICU:	1.115	
	TH	2.00	856	3,200	0.268				
	LT	1.00	89	1,600	0.056		LOS:	F	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **1 - Mountain Ave & Central Ave**
Description: **Future Base**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	184	0	0.000	N-S(1):	0.164
	TH	2.00	598	3,200	0.244 *	N-S(2):	0.372 *
	LT	0.00	0	0	0.000	E-W(1):	0.188
Westbound	RT	0.00	541	0	0.000	E-W(2):	0.371 *
	TH	2.00	646	3,200	0.371 *		
	LT	1.00	300	1,600	0.188	V/C:	0.743
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	525	3,200	0.164	ITS:	0.000
	LT	1.00	204	1,600	0.128 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.843
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	283	0	0.000	N-S(1):	0.198
	TH	2.00	898	3,200	0.369 *	N-S(2):	0.552 *
	LT	0.00	0	0	0.000	E-W(1):	0.159
Westbound	RT	0.00	476	1,600	0.298 *	E-W(2):	0.298 *
	TH	2.00	236	1,600	0.148		
	LT	1.00	255	1,600	0.159	V/C:	0.850
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	633	3,200	0.198	ITS:	0.000
	LT	1.00	292	1,600	0.183 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.950
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	E

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **2 - Mountain Ave & Evergreen Ave**
Description: **Future Base**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.415 *
	TH	2.00	506	3,200	0.158	N-S(2):	0.158
	LT	1.00	391	1,600	0.244 *	E-W(1):	0.120
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.205 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.620
Northbound	RT	0.00	134	0	0.000	Lost Time:	0.100
	TH	2.00	412	3,200	0.171 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	1.00	192	1,600	0.120	ICU:	0.720
	TH	2.00	327	3,200	0.102		
	LT	1.00	328	1,600	0.205 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.596 *
	TH	2.00	573	3,200	0.179	N-S(2):	0.179
	LT	1.00	574	1,600	0.359 *	E-W(1):	0.373 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.207
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.969
Northbound	RT	0.00	146	0	0.000	Lost Time:	0.100
	TH	2.00	611	3,200	0.237 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	1.00	138	1,600	0.086	ICU:	1.069
	TH	2.00	1,194	3,200	0.373 *		
	LT	1.00	331	1,600	0.207	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **3 - Mountain Ave & Duarte Rd**
Description: **Future Base**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	N
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :	SBR, WBR			
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	1.00	167	1,067	0.000		N-S(1):	0.251	*
	TH	1.00	169	1,067	0.158		N-S(2):	0.179	
	LT	1.00	80	1,067	0.075	*	E-W(1):	0.115	
Westbound	RT	1.00	190	1,067	0.103	*	E-W(2):	0.269	*
	TH	2.00	170	3,200	0.053				
	LT	1.00	54	1,600	0.034		V/C:	0.520	
Northbound	RT	1.00	139	1,600	0.087		Lost Time:	0.100	
	TH	1.00	188	1,067	0.176	*	ITS:	0.000	
	LT	1.00	34	1,600	0.021				
Eastbound	RT	0.00	24	0	0.000		ICU:	0.620	
	TH	2.00	236	3,200	0.081				
	LT	1.00	177	1,067	0.166	*	LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	1.00	230	1,067	0.000		N-S(1):	0.273	
	TH	1.00	295	1,067	0.276	*	N-S(2):	0.290	*
	LT	1.00	139	1,067	0.130		E-W(1):	0.217	
Westbound	RT	1.00	237	1,067	0.092	*	E-W(2):	0.320	*
	TH	2.00	219	3,200	0.068				
	LT	1.00	46	1,600	0.029		V/C:	0.610	
Northbound	RT	1.00	119	1,600	0.074		Lost Time:	0.100	
	TH	1.00	153	1,067	0.143		ITS:	0.000	
	LT	1.00	23	1,600	0.014	*			
Eastbound	RT	0.00	101	0	0.000		ICU:	0.710	
	TH	2.00	502	3,200	0.188				
	LT	1.00	243	1,067	0.228	*	LOS:	C	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **4 - Buena Vista St & Huntington Dr**
Description: **Future Base**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.152
	TH	2.00	261	3,200	0.102 *	N-S(2):	0.208 *
	LT	1.00	63	1,600	0.039	E-W(1):	0.125
Westbound	RT	1.00	125	1,600	0.058	E-W(2):	0.432 *
	TH	2.00	1,258	3,200	0.393 *		
	LT	1.00	84	1,600	0.053	V/C:	0.640
Northbound	RT	0.00	87	0	0.000	Lost Time:	0.100
	TH	2.00	274	3,200	0.113	ITS:	0.000
	LT	1.00	170	1,600	0.106 *		
Eastbound	RT	1.00	113	1,600	0.018	ICU:	0.740
	TH	2.00	230	3,200	0.072		
	LT	1.00	62	1,600	0.039 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	122	0	0.000	N-S(1):	0.286
	TH	2.00	298	3,200	0.131 *	N-S(2):	0.304 *
	LT	1.00	190	1,600	0.119	E-W(1):	0.480 *
Westbound	RT	1.00	77	1,600	0.000	E-W(2):	0.293
	TH	2.00	674	3,200	0.211		
	LT	1.00	187	1,600	0.117 *	V/C:	0.784
Northbound	RT	0.00	206	0	0.000	Lost Time:	0.100
	TH	2.00	327	3,200	0.167	ITS:	0.000
	LT	1.00	276	1,600	0.173 *		
Eastbound	RT	1.00	196	1,600	0.036	ICU:	0.884
	TH	2.00	1,160	3,200	0.363 *		
	LT	1.00	131	1,600	0.082	LOS:	D

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **5 - Buena Vista St & Central Ave**
Description: **Future Base**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	14	0	0.000	N-S(1):	0.229 *
	TH	2.00	494	3,200	0.159	N-S(2):	0.194
	LT	1.00	40	1,600	0.025 *	E-W(1):	0.299 *
Westbound	RT	1.00	291	1,600	0.169	E-W(2):	0.170
	TH	1.00	165	1,600	0.103		
	LT	1.00	433	1,600	0.271 *	V/C:	0.528
Northbound	RT	0.00	296	0	0.000	Lost Time:	0.100
	TH	2.00	356	3,200	0.204 *	ITS:	0.000
	LT	1.00	56	1,600	0.035		
Eastbound	RT	0.00	33	0	0.000	ICU:	0.628
	TH	1.00	12	1,600	0.028 *		
	LT	1.00	1	1,600	0.001	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	21	0	0.000	N-S(1):	0.267 *
	TH	2.00	656	3,200	0.212	N-S(2):	0.246
	LT	1.00	93	1,600	0.058 *	E-W(1):	0.302 *
Westbound	RT	1.00	389	1,600	0.214	E-W(2):	0.219
	TH	1.00	185	1,600	0.116		
	LT	1.00	201	1,600	0.126 *	V/C:	0.569
Northbound	RT	0.00	225	0	0.000	Lost Time:	0.100
	TH	2.00	444	3,200	0.209 *	ITS:	0.000
	LT	1.00	54	1,600	0.034		
Eastbound	RT	0.00	173	0	0.000	ICU:	0.669
	TH	1.00	108	1,600	0.176 *		
	LT	1.00	8	1,600	0.005	LOS:	B

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **6 - Buena Vista St & I-210 WB On-ramp**
Description: **Future Base**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	196	0	0.000		N-S(1):	0.222	
	TH	2.00	763	3,200	0.300	*	N-S(2):	0.359	*
	LT	0.00	0	0	0.000		E-W(1):	0.000	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	V/C:	0.359	
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100	
	TH	2.00	710	3,200	0.222		ITS:	0.000	
	LT	1.00	94	1,600	0.059	*			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.459	
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	LOS:	A	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	376	0	0.000		N-S(1):	0.236	
	TH	2.00	640	3,200	0.318	*	N-S(2):	0.526	*
	LT	0.00	0	0	0.000		E-W(1):	0.000	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	V/C:	0.526	
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100	
	TH	2.00	755	3,200	0.236		ITS:	0.000	
	LT	1.00	332	1,600	0.208	*			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.626	
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	LOS:	B	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **7 - Buena Vista St & Evergreen St/I-210 EB On-ramp**
Description: **Future Base**

Thru Lane:	1600 vph		N-S Split Phase :	N
Left Lane:	1600 vph		E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.284	*
	TH	2.00	505	3,200	0.158		N-S(2):	0.158	
	LT	1.00	239	1,600	0.149	*	E-W(1):	0.272	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.256	
	TH	0.00	0	0	0.000				
	LT	0.00	0	0	0.000	*	V/C:	0.556	
Northbound	RT	1.00	216	1,600	0.135	*	Lost Time:	0.100	
	TH	2.00	400	3,200	0.125		ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	0.00	435	1,600	0.272	*	ICU:	0.656	
	TH	2.00	3	1,600	0.258				
	LT	0.00	410	1,600	0.256		LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.345	*
	TH	2.00	429	3,200	0.134		N-S(2):	0.134	
	LT	1.00	203	1,600	0.127	*	E-W(1):	0.216	
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.245	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000		V/C:	0.590	
Northbound	RT	1.00	339	1,600	0.212		Lost Time:	0.100	
	TH	2.00	696	3,200	0.218	*	ITS:	0.000	
	LT	0.00	0	0	0.000				
Eastbound	RT	0.00	121	0	0.000		ICU:	0.690	
	TH	2.00	224	1,600	0.216				
	LT	0.00	392	1,600	0.245	*	LOS:	B	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **9 - Buena Vista St & Duarte Rd**
Description: **Future Base**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	118	0	0.000	N-S(1):	0.641 *
	TH	2.00	305	1,067	0.396	N-S(2):	0.000
	LT	0.00	504	1,067	0.472 *	E-W(1):	0.189
Westbound	RT	1.00	175	1,067	0.000	E-W(2):	0.281 *
	TH	2.00	176	3,200	0.055 *		
	LT	1.00	122	1,600	0.076	V/C:	0.922
Northbound	RT	0.00	168	0	0.000	Lost Time:	0.100
	TH	2.00	193	2,134	0.169 *	ITS:	0.000
	LT	1.00	45	1,600	0.028		
Eastbound	RT	1.00	42	1,600	0.012	ICU:	1.022
	TH	2.00	361	3,200	0.113		
	LT	1.00	241	1,067	0.226 *	LOS:	F

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	146	0	0.000	N-S(1):	0.464 *
	TH	2.00	302	1,067	0.269 *	N-S(2):	0.000
	LT	0.00	127	1,067	0.119	E-W(1):	0.257
Westbound	RT	1.00	491	1,067	0.401 *	E-W(2):	0.611 *
	TH	2.00	288	3,200	0.090		
	LT	1.00	190	1,600	0.119	V/C:	1.075
Northbound	RT	0.00	92	0	0.000	Lost Time:	0.100
	TH	2.00	324	2,134	0.195 *	ITS:	0.000
	LT	1.00	93	1,600	0.058		
Eastbound	RT	1.00	110	1,600	0.040	ICU:	1.175
	TH	2.00	441	3,200	0.138		
	LT	1.00	224	1,067	0.210 *	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **13 - Hope Dr & Duarte Rd**
Description: **Future Base**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.000	
	TH	0.00	0	0	0.000	*	N-S(2):	0.055	*
	LT	0.00	0	0	0.000		E-W(1):	0.242	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.148	
	TH	2.00	475	3,200	0.148				
	LT	1.00	60	1,600	0.038	*	V/C:	0.297	
Northbound	RT	1.00	20	1,600	0.000		Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	88	1,600	0.055	*			
Eastbound	RT	0.00	213	0	0.000		ICU:	0.397	
	TH	2.00	441	3,200	0.204	*			
	LT	0.00	0	0	0.000		LOS:	A	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.032	
	TH	0.00	0	0	0.000	*	N-S(2):	0.133	*
	LT	0.00	0	0	0.000		E-W(1):	0.257	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.109	
	TH	2.00	350	3,200	0.109				
	LT	1.00	31	1,600	0.019	*	V/C:	0.390	
Northbound	RT	1.00	66	1,600	0.032		Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	212	1,600	0.133	*			
Eastbound	RT	0.00	56	0	0.000		ICU:	0.490	
	TH	2.00	707	3,200	0.238	*			
	LT	0.00	0	0	0.000		LOS:	A	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **14 - Highland Ave & Huntington Dr**
Description: **Future Base**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	1.00	32	1,600	0.013		N-S(1):	0.093	
	TH	2.00	171	3,200	0.042	*	N-S(2):	0.096	*
	LT	0.00	64	1,600	0.040		E-W(1):	0.416	*
Westbound	RT	1.00	72	1,600	0.025		E-W(2):	0.378	
	TH	2.00	1,167	3,200	0.365				
	LT	1.00	467	1,600	0.292	*	V/C:	0.512	
Northbound	RT	1.00	246	1,600	0.008		Lost Time:	0.100	
	TH	2.00	84	3,200	0.053		ITS:	0.000	
	LT	0.00	87	1,600	0.054	*			
Eastbound	RT	1.00	87	1,600	0.027		ICU:	0.612	
	TH	2.00	397	3,200	0.124	*			
	LT	1.00	21	1,600	0.013		LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	1.00	44	1,600	0.022		N-S(1):	0.286	*
	TH	2.00	142	3,200	0.044		N-S(2):	0.127	
	LT	0.00	97	1,600	0.061	*	E-W(1):	0.515	*
Westbound	RT	1.00	47	1,600	0.000		E-W(2):	0.208	
	TH	2.00	629	3,200	0.197				
	LT	1.00	167	1,600	0.104	*	V/C:	0.801	
Northbound	RT	1.00	444	1,600	0.225	*	Lost Time:	0.100	
	TH	2.00	149	3,200	0.088		ITS:	0.000	
	LT	0.00	132	1,600	0.083				
Eastbound	RT	1.00	136	1,600	0.044		ICU:	0.901	
	TH	2.00	1,316	3,200	0.411	*			
	LT	1.00	18	1,600	0.011		LOS:	E	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **15 - Highland Ave & Central Ave**
Description: **Future Base**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	131	1,600	0.043		N-S(1):	0.091
	TH	2.00	457	3,200	0.099	*	N-S(2):	0.133 *
	LT	0.00	45	1,600	0.028		E-W(1):	0.365 *
Westbound	RT	0.00	51	0	0.000		E-W(2):	0.236
	TH	1.00	203	1,600	0.159			
	LT	1.00	271	1,600	0.169	*	V/C:	0.498
Northbound	RT	1.00	166	1,600	0.019		Lost Time:	0.100
	TH	2.00	186	3,200	0.063		ITS:	0.000
	LT	0.00	54	1,600	0.034	*		
Eastbound	RT	0.00	184	0	0.000		ICU:	0.598
	TH	1.00	130	1,600	0.196	*		
	LT	1.00	123	1,600	0.077		LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS	
Southbound	RT	1.00	169	1,600	0.066		N-S(1):	0.408 *
	TH	2.00	190	3,200	0.074		N-S(2):	0.122
	LT	0.00	112	1,600	0.070	*	E-W(1):	0.281 *
Westbound	RT	0.00	39	0	0.000		E-W(2):	0.168
	TH	1.00	102	1,600	0.088			
	LT	1.00	64	1,600	0.040	*	V/C:	0.689
Northbound	RT	1.00	573	1,600	0.338	*	Lost Time:	0.100
	TH	2.00	504	3,200	0.180		ITS:	0.000
	LT	0.00	77	1,600	0.048			
Eastbound	RT	0.00	53	0	0.000		ICU:	0.789
	TH	1.00	333	1,600	0.241	*		
	LT	1.00	128	1,600	0.080		LOS:	C

* - Denotes critical movement

Project Title: Duarte
Intersection: 17 - Highland Ave & Business Center Dr
Description: Future Base

Thru Lane:	1600	vph	N-S Split Phase :	N
Left Lane:	1600	vph	E-W Split Phase :	Y
Double Lt Penalty:	10	%	Lost Time (% of cycle) :	10
ITS:	0	%	V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	24	0	0.000		N-S(1):	0.137	
	TH	2.00	780	3,200	0.251	*	N-S(2):	0.256	*
	LT	1.00	32	1,600	0.020		E-W(1):	0.019	*
Westbound	RT	0.00	8	0	0.000		E-W(2):	0.000	
	TH	1.00	0	1,600	0.005	*			
	LT	1.00	3	1,600	0.002		V/C:	0.275	
Northbound	RT	0.00	24	0	0.000		Lost Time:	0.100	
	TH	2.00	350	3,200	0.117		ITS:	0.000	
	LT	1.00	8	1,600	0.005	*			
Eastbound	RT	0.00	5	0	0.000		ICU:	0.375	
	TH	1.00	2	1,600	0.004				
	LT	1.00	22	1,600	0.014	*	LOS:	A	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	15	0	0.000		N-S(1):	0.295	*
	TH	2.00	268	3,200	0.088		N-S(2):	0.100	
	LT	1.00	8	1,600	0.005	*	E-W(1):	0.063	*
Westbound	RT	0.00	27	0	0.000		E-W(2):	0.000	
	TH	1.00	1	1,600	0.018	*			
	LT	1.00	24	1,600	0.015		V/C:	0.358	
Northbound	RT	0.00	11	0	0.000		Lost Time:	0.100	
	TH	2.00	916	3,200	0.290	*	ITS:	0.000	
	LT	1.00	19	1,600	0.012				
Eastbound	RT	0.00	23	0	0.000		ICU:	0.458	
	TH	1.00	0	1,600	0.014				
	LT	1.00	72	1,600	0.045	*	LOS:	A	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **18 - I-605/Mt Olive Dr & Huntington Dr**
Description: **Future Base**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	84	0	0.000	N-S(1):	0.467 *
	TH	2.00	348	3,200	0.135 *	N-S(2):	0.000
	LT	1.00	87	1,600	0.054	E-W(1):	0.290
Westbound	RT	1.00	86	1,600	0.027	E-W(2):	0.390 *
	TH	2.00	1,128	3,200	0.353 *		
	LT	1.00	333	1,600	0.208	V/C:	0.857
Northbound	RT	1.00	251	1,600	0.053	Lost Time:	0.100
	TH	0.40	193	645	0.299	ITS:	0.000
	LT	1.60	764	2,299	0.332 *		
Eastbound	RT	1.00	359	1,600	0.058	ICU:	0.957
	TH	2.00	261	3,200	0.082		
	LT	1.00	59	1,600	0.037 *	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	46	0	0.000	N-S(1):	0.428 *
	TH	2.00	281	3,200	0.102 *	N-S(2):	0.000
	LT	1.00	79	1,600	0.049	E-W(1):	0.643 *
Westbound	RT	1.00	43	1,600	0.002	E-W(2):	0.222
	TH	2.00	524	3,200	0.164		
	LT	1.00	262	1,600	0.164 *	V/C:	1.071
Northbound	RT	1.00	652	1,600	0.326 *	Lost Time:	0.100
	TH	0.68	187	1,080	0.173	ITS:	0.000
	LT	1.32	367	1,908	0.192		
Eastbound	RT	1.00	920	1,600	0.479 *	ICU:	1.171
	TH	2.00	917	3,200	0.287		
	LT	1.00	92	1,600	0.058	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **1 - Mountain Ave & Central Ave**
Description: **Future plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	184	0	0.000	N-S(1):	0.168
	TH	2.00	603	3,200	0.246 *	N-S(2):	0.374 *
	LT	0.00	0	0	0.000	E-W(1):	0.188
Westbound	RT	0.00	541	0	0.000	E-W(2):	0.371 *
	TH	2.00	646	3,200	0.371 *		
	LT	1.00	300	1,600	0.188	V/C:	0.745
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	539	3,200	0.168	ITS:	0.000
	LT	1.00	204	1,600	0.128 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.845
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	283	0	0.000	N-S(1):	0.201
	TH	2.00	913	3,200	0.374 *	N-S(2):	0.557 *
	LT	0.00	0	0	0.000	E-W(1):	0.159
Westbound	RT	0.00	476	1,600	0.298 *	E-W(2):	0.298 *
	TH	2.00	236	1,600	0.148		
	LT	1.00	255	1,600	0.159	V/C:	0.855
Northbound	RT	0.00	0	0	0.000	Lost Time:	0.100
	TH	2.00	643	3,200	0.201	ITS:	0.000
	LT	1.00	292	1,600	0.183 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.955
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	LOS:	E

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **2 - Mountain Ave & Evergreen Ave**
Description: **Future plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.419 *
	TH	2.00	511	3,200	0.160	N-S(2):	0.160
	LT	1.00	391	1,600	0.244 *	E-W(1):	0.120
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.205 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.624
Northbound	RT	0.00	134	0	0.000	Lost Time:	0.100
	TH	2.00	426	3,200	0.175 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	1.00	192	1,600	0.120	ICU:	0.724
	TH	2.00	333	3,200	0.104		
	LT	1.00	328	1,600	0.205 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.599 *
	TH	2.00	588	3,200	0.184	N-S(2):	0.184
	LT	1.00	574	1,600	0.359 *	E-W(1):	0.379 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.207
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.978
Northbound	RT	0.00	146	0	0.000	Lost Time:	0.100
	TH	2.00	621	3,200	0.240 *	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	1.00	138	1,600	0.086	ICU:	1.078
	TH	2.00	1,212	3,200	0.379 *		
	LT	1.00	331	1,600	0.207	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **3 - Mountain Ave & Duarte Rd**
Description: **Future plus Project**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	N
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :	SBR, WBR			
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	167	1,067	0.000	N-S(1):	0.256 *
	TH	1.00	169	1,067	0.158	N-S(2):	0.179
	LT	1.00	85	1,067	0.080 *	E-W(1):	0.119
Westbound	RT	1.00	204	1,067	0.112 *	E-W(2):	0.278 *
	TH	2.00	184	3,200	0.058		
	LT	1.00	57	1,600	0.036	V/C:	0.534
Northbound	RT	1.00	140	1,600	0.088	Lost Time:	0.100
	TH	1.00	188	1,067	0.176 *	ITS:	0.000
	LT	1.00	34	1,600	0.021		
Eastbound	RT	0.00	24	0	0.000	ICU:	0.634
	TH	2.00	241	3,200	0.083		
	LT	1.00	177	1,067	0.166 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	230	1,067	0.000	N-S(1):	0.287
	TH	1.00	295	1,067	0.276 *	N-S(2):	0.290 *
	LT	1.00	154	1,067	0.144	E-W(1):	0.223
Westbound	RT	1.00	247	1,067	0.087 *	E-W(2):	0.315 *
	TH	2.00	229	3,200	0.072		
	LT	1.00	48	1,600	0.030	V/C:	0.605
Northbound	RT	1.00	122	1,600	0.076	Lost Time:	0.100
	TH	1.00	153	1,067	0.143	ITS:	0.000
	LT	1.00	23	1,600	0.014 *		
Eastbound	RT	0.00	101	0	0.000	ICU:	0.705
	TH	2.00	517	3,200	0.193		
	LT	1.00	243	1,067	0.228 *	LOS:	C

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **4 - Buena Vista St & Huntington Dr**
Description: **Future plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	65	0	0.000	N-S(1):	0.153
	TH	2.00	261	3,200	0.102 *	N-S(2):	0.208 *
	LT	1.00	64	1,600	0.040	E-W(1):	0.126
Westbound	RT	1.00	128	1,600	0.060	E-W(2):	0.437 *
	TH	2.00	1,272	3,200	0.398 *		
	LT	1.00	84	1,600	0.053	V/C:	0.645
Northbound	RT	0.00	87	0	0.000	Lost Time:	0.100
	TH	2.00	274	3,200	0.113	ITS:	0.000
	LT	1.00	170	1,600	0.106 *		
Eastbound	RT	1.00	113	1,600	0.018	ICU:	0.745
	TH	2.00	235	3,200	0.073		
	LT	1.00	62	1,600	0.039 *	LOS:	C

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	122	0	0.000	N-S(1):	0.288
	TH	2.00	298	3,200	0.131 *	N-S(2):	0.304 *
	LT	1.00	193	1,600	0.121	E-W(1):	0.484 *
Westbound	RT	1.00	79	1,600	0.000	E-W(2):	0.296
	TH	2.00	684	3,200	0.214		
	LT	1.00	187	1,600	0.117 *	V/C:	0.788
Northbound	RT	0.00	206	0	0.000	Lost Time:	0.100
	TH	2.00	327	3,200	0.167	ITS:	0.000
	LT	1.00	276	1,600	0.173 *		
Eastbound	RT	1.00	196	1,600	0.036	ICU:	0.888
	TH	2.00	1,175	3,200	0.367 *		
	LT	1.00	131	1,600	0.082	LOS:	D

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **5 - Buena Vista St & Central Ave**
Description: **Future plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	14	0	0.000		N-S(1):	0.229	*
	TH	2.00	494	3,200	0.159		N-S(2):	0.194	
	LT	1.00	40	1,600	0.025	*	E-W(1):	0.321	*
Westbound	RT	1.00	291	1,600	0.169		E-W(2):	0.170	
	TH	1.00	165	1,600	0.103				
	LT	1.00	469	1,600	0.293	*	V/C:	0.550	
Northbound	RT	0.00	296	0	0.000		Lost Time:	0.100	
	TH	2.00	356	3,200	0.204	*	ITS:	0.000	
	LT	1.00	56	1,600	0.035				
Eastbound	RT	0.00	33	0	0.000		ICU:	0.650	
	TH	1.00	12	1,600	0.028	*			
	LT	1.00	1	1,600	0.001		LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	21	0	0.000		N-S(1):	0.267	*
	TH	2.00	656	3,200	0.212		N-S(2):	0.246	
	LT	1.00	93	1,600	0.058	*	E-W(1):	0.317	*
Westbound	RT	1.00	389	1,600	0.214		E-W(2):	0.219	
	TH	1.00	185	1,600	0.116				
	LT	1.00	226	1,600	0.141	*	V/C:	0.584	
Northbound	RT	0.00	225	0	0.000		Lost Time:	0.100	
	TH	2.00	444	3,200	0.209	*	ITS:	0.000	
	LT	1.00	54	1,600	0.034				
Eastbound	RT	0.00	173	0	0.000		ICU:	0.684	
	TH	1.00	108	1,600	0.176	*			
	LT	1.00	8	1,600	0.005		LOS:	B	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **6 - Buena Vista St & I-210 WB On-ramp**
Description: **Future plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	232	0	0.000		N-S(1):	0.222	
	TH	2.00	763	3,200	0.311	*	N-S(2):	0.380	*
	LT	0.00	0	0	0.000		E-W(1):	0.000	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	V/C:	0.380	
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100	
	TH	2.00	710	3,200	0.222		ITS:	0.000	
	LT	1.00	111	1,600	0.069	*			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.480	
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	LOS:	A	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	401	0	0.000		N-S(1):	0.236	
	TH	2.00	640	3,200	0.325	*	N-S(2):	0.539	*
	LT	0.00	0	0	0.000		E-W(1):	0.000	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.000	*
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	V/C:	0.539	
Northbound	RT	0.00	0	0	0.000		Lost Time:	0.100	
	TH	2.00	755	3,200	0.236		ITS:	0.000	
	LT	1.00	343	1,600	0.214	*			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.639	
	TH	0.00	0	0	0.000	*			
	LT	0.00	0	0	0.000	*	LOS:	B	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **7 - Buena Vista St & Evergreen St/I-210 EB On-ramp**
Description: **Future plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.310 *
	TH	2.00	505	3,200	0.158	N-S(2):	0.158
	LT	1.00	239	1,600	0.149 *	E-W(1):	0.279 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.256
	TH	0.00	0	0	0.000		
	LT	0.00	0	0	0.000 *	V/C:	0.589
Northbound	RT	1.00	258	1,600	0.161 *	Lost Time:	0.100
	TH	2.00	417	3,200	0.130	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	447	1,600	0.279 *	ICU:	0.689
	TH	2.00	3	1,600	0.258		
	LT	0.00	410	1,600	0.256	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.357 *
	TH	2.00	429	3,200	0.134	N-S(2):	0.134
	LT	1.00	203	1,600	0.127 *	E-W(1):	0.239
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.245 *
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000	V/C:	0.602
Northbound	RT	1.00	368	1,600	0.230 *	Lost Time:	0.100
	TH	2.00	707	3,200	0.221	ITS:	0.000
	LT	0.00	0	0	0.000		
Eastbound	RT	0.00	159	0	0.000	ICU:	0.702
	TH	2.00	224	1,600	0.239		
	LT	0.00	392	1,600	0.245 *	LOS:	C

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **9 - Buena Vista St & Duarte Rd**
Description: **Future plus Project**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	118	0	0.000	N-S(1):	0.661 *
	TH	2.00	308	1,067	0.399	N-S(2):	0.000
	LT	0.00	522	1,067	0.489 *	E-W(1):	0.201
Westbound	RT	1.00	234	1,067	0.000	E-W(2):	0.291 *
	TH	2.00	207	3,200	0.065 *		
	LT	1.00	136	1,600	0.085	V/C:	0.952
Northbound	RT	0.00	173	0	0.000	Lost Time:	0.100
	TH	2.00	194	2,134	0.172 *	ITS:	0.000
	LT	1.00	45	1,600	0.028		
Eastbound	RT	1.00	42	1,600	0.012	ICU:	1.052
	TH	2.00	371	3,200	0.116		
	LT	1.00	241	1,067	0.226 *	LOS:	F

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	146	0	0.000	N-S(1):	0.500 *
	TH	2.00	304	1,067	0.297 *	N-S(2):	0.000
	LT	0.00	183	1,067	0.172	E-W(1):	0.273
Westbound	RT	1.00	531	1,067	0.412 *	E-W(2):	0.622 *
	TH	2.00	309	3,200	0.097		
	LT	1.00	200	1,600	0.125	V/C:	1.122
Northbound	RT	0.00	107	0	0.000	Lost Time:	0.100
	TH	2.00	327	2,134	0.203 *	ITS:	0.000
	LT	1.00	93	1,600	0.058		
Eastbound	RT	1.00	110	1,600	0.040	ICU:	1.222
	TH	2.00	474	3,200	0.148		
	LT	1.00	224	1,067	0.210 *	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **13 - Hope Dr & Duarte Rd**
Description: **Future plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.000
	TH	0.00	0	0	0.000 *	N-S(2):	0.055 *
	LT	0.00	0	0	0.000	E-W(1):	0.254 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.181
	TH	2.00	579	3,200	0.181		
	LT	1.00	63	1,600	0.039 *	V/C:	0.309
Northbound	RT	1.00	21	1,600	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	88	1,600	0.055 *		
Eastbound	RT	0.00	213	0	0.000	ICU:	0.409
	TH	2.00	474	3,200	0.215 *		
	LT	0.00	0	0	0.000	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.033
	TH	0.00	0	0	0.000 *	N-S(2):	0.133 *
	LT	0.00	0	0	0.000	E-W(1):	0.292 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.131
	TH	2.00	420	3,200	0.131		
	LT	1.00	33	1,600	0.021 *	V/C:	0.425
Northbound	RT	1.00	69	1,600	0.033	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	212	1,600	0.133 *		
Eastbound	RT	0.00	56	0	0.000	ICU:	0.525
	TH	2.00	811	3,200	0.271 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **14 - Highland Ave & Huntington Dr**
Description: **Future plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	32	1,600	0.013	N-S(1):	0.102
	TH	2.00	175	3,200	0.042 *	N-S(2):	0.107 *
	LT	0.00	64	1,600	0.040	E-W(1):	0.436 *
Westbound	RT	1.00	72	1,600	0.025	E-W(2):	0.378
	TH	2.00	1,167	3,200	0.365		
	LT	1.00	499	1,600	0.312 *	V/C:	0.543
Northbound	RT	1.00	341	1,600	0.057	Lost Time:	0.100
	TH	2.00	95	3,200	0.062	ITS:	0.000
	LT	0.00	104	1,600	0.065 *		
Eastbound	RT	1.00	93	1,600	0.026	ICU:	0.643
	TH	2.00	397	3,200	0.124 *		
	LT	1.00	21	1,600	0.013	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	44	1,600	0.022	N-S(1):	0.295 *
	TH	2.00	154	3,200	0.046	N-S(2):	0.135
	LT	0.00	97	1,600	0.061 *	E-W(1):	0.579 *
Westbound	RT	1.00	47	1,600	0.000	E-W(2):	0.208
	TH	2.00	629	3,200	0.197		
	LT	1.00	268	1,600	0.168 *	V/C:	0.874
Northbound	RT	1.00	509	1,600	0.234 *	Lost Time:	0.100
	TH	2.00	157	3,200	0.094	ITS:	0.000
	LT	0.00	143	1,600	0.089		
Eastbound	RT	1.00	154	1,600	0.052	ICU:	0.974
	TH	2.00	1,316	3,200	0.411 *		
	LT	1.00	18	1,600	0.011	LOS:	E

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **15 - Highland Ave & Central Ave**
Description: **Future plus Project**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	131	1,600	0.043	N-S(1):	0.117
	TH	2.00	498	3,200	0.105 *	N-S(2):	0.161 *
	LT	0.00	45	1,600	0.028	E-W(1):	0.371 *
Westbound	RT	0.00	51	0	0.000	E-W(2):	0.236
	TH	1.00	203	1,600	0.159		
	LT	1.00	272	1,600	0.170 *	V/C:	0.532
Northbound	RT	1.00	169	1,600	0.021	Lost Time:	0.100
	TH	2.00	309	3,200	0.089	ITS:	0.000
	LT	0.00	90	1,600	0.056 *		
Eastbound	RT	0.00	192	0	0.000	ICU:	0.632
	TH	1.00	130	1,600	0.201 *		
	LT	1.00	123	1,600	0.077	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	169	1,600	0.066	N-S(1):	0.408 *
	TH	2.00	320	3,200	0.094	N-S(2):	0.158
	LT	0.00	112	1,600	0.070 *	E-W(1):	0.300 *
Westbound	RT	0.00	39	0	0.000	E-W(2):	0.168
	TH	1.00	102	1,600	0.088		
	LT	1.00	67	1,600	0.042 *	V/C:	0.708
Northbound	RT	1.00	575	1,600	0.338 *	Lost Time:	0.100
	TH	2.00	588	3,200	0.198	ITS:	0.000
	LT	0.00	102	1,600	0.064		
Eastbound	RT	0.00	80	0	0.000	ICU:	0.808
	TH	1.00	333	1,600	0.258 *		
	LT	1.00	128	1,600	0.080	LOS:	D

* - Denotes critical movement

Project Title: Duarte
Intersection: 17 - Highland Ave & Business Center Dr
Description: Future plus Project

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	63	0	0.000	N-S(1):	0.158
	TH	2.00	788	3,200	0.266 *	N-S(2):	0.287 *
	LT	1.00	32	1,600	0.020	E-W(1):	0.081 *
Westbound	RT	0.00	8	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.005 *		
	LT	1.00	3	1,600	0.002	V/C:	0.368
Northbound	RT	0.00	24	0	0.000	Lost Time:	0.100
	TH	2.00	416	3,200	0.138	ITS:	0.000
	LT	1.00	34	1,600	0.021 *		
Eastbound	RT	0.00	70	0	0.000	ICU:	0.468
	TH	1.00	2	1,600	0.045		
	LT	1.00	121	1,600	0.076 *	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	112	0	0.000	N-S(1):	0.303 *
	TH	2.00	337	3,200	0.140	N-S(2):	0.193
	LT	1.00	8	1,600	0.005 *	E-W(1):	0.109 *
Westbound	RT	0.00	27	0	0.000	E-W(2):	0.000
	TH	1.00	1	1,600	0.018 *		
	LT	1.00	24	1,600	0.015	V/C:	0.412
Northbound	RT	0.00	11	0	0.000	Lost Time:	0.100
	TH	2.00	944	3,200	0.298 *	ITS:	0.000
	LT	1.00	84	1,600	0.053		
Eastbound	RT	0.00	71	0	0.000	ICU:	0.512
	TH	1.00	0	1,600	0.044		
	LT	1.00	145	1,600	0.091 *	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **18 - I-605/Mt Olive Dr & Huntington Dr**
Description: **Future plus Project**

Thru Lane:	1600 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	84	0	0.000	N-S(1):	0.477 *
	TH	2.00	348	3,200	0.135 *	N-S(2):	0.000
	LT	1.00	87	1,600	0.054	E-W(1):	0.312
Westbound	RT	1.00	86	1,600	0.027	E-W(2):	0.391 *
	TH	2.00	1,133	3,200	0.354 *		
	LT	1.00	333	1,600	0.208	V/C:	0.868
Northbound	RT	1.00	251	1,600	0.053	Lost Time:	0.100
	TH	0.39	193	628	0.308	ITS:	0.000
	LT	1.61	791	2,315	0.342 *		
Eastbound	RT	1.00	440	1,600	0.104	ICU:	0.968
	TH	2.00	275	3,200	0.086		
	LT	1.00	59	1,600	0.037 *	LOS:	E

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	46	0	0.000	N-S(1):	0.428 *
	TH	2.00	281	3,200	0.102 *	N-S(2):	0.000
	LT	1.00	79	1,600	0.049	E-W(1):	0.662 *
Westbound	RT	1.00	43	1,600	0.002	E-W(2):	0.226
	TH	2.00	539	3,200	0.168		
	LT	1.00	262	1,600	0.164 *	V/C:	1.090
Northbound	RT	1.00	652	1,600	0.326 *	Lost Time:	0.100
	TH	0.58	187	935	0.200	ITS:	0.000
	LT	1.42	453	2,039	0.222		
Eastbound	RT	1.00	975	1,600	0.498 *	ICU:	1.190
	TH	2.00	927	3,200	0.290		
	LT	1.00	92	1,600	0.058	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **10 - I-210 WB Off-ramp & Central Ave**
Description: **Existing Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : Y
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	7	1,600	0.004 *	N-S(1):	0.213 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.211
Westbound	RT	0.00	8	0	0.000	E-W(2):	0.303 *
	TH	1.00	472	1,600	0.300 *		
	LT	0.00	0	0	0.000	V/C:	0.516
Northbound	RT	1.00	334	1,600	0.209 *	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	298	1,600	0.186		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.616
	TH	1.00	334	1,600	0.211		
	LT	0.00	4	1,600	0.003 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.88	23	1,415	0.014	N-S(1):	0.155 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	0.12	3	185	0.016 *	E-W(1):	0.259
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.312 *
	TH	1.00	483	1,600	0.308 *		
	LT	0.00	0	0	0.000	V/C:	0.467
Northbound	RT	1.00	165	1,600	0.103	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	222	1,600	0.139 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.567
	TH	1.00	408	1,600	0.259		
	LT	0.00	6	1,600	0.004 *	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **11 - Village Rd & Duarte Rd**
Description: **Existing Mitigations**

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.000	
	TH	0.00	0	0	0.000	*	N-S(2):	0.041	*
	LT	0.00	0	0	0.000		E-W(1):	0.343	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.099	
	TH	2.00	317	3,200	0.099				
	LT	1.00	166	1,600	0.104	*	V/C:	0.384	
Northbound	RT	1.00	19	1,600	0.000		Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	66	1,600	0.041	*			
Eastbound	RT	0.00	262	0	0.000		ICU:	0.484	
	TH	2.00	502	3,200	0.239	*			
	LT	0.00	0	0	0.000		LOS:	A	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.110	
	TH	0.00	0	0	0.000	*	N-S(2):	0.158	*
	LT	0.00	0	0	0.000		E-W(1):	0.180	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.131	
	TH	2.00	420	3,200	0.131				
	LT	1.00	11	1,600	0.007	*	V/C:	0.338	
Northbound	RT	1.00	181	1,600	0.110		Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	252	1,600	0.158	*			
Eastbound	RT	0.00	43	0	0.000		ICU:	0.438	
	TH	2.00	509	3,200	0.173	*			
	LT	0.00	0	0	0.000		LOS:	A	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **9 - Buena Vista St & Duarte Rd**
Description: **Existing plus Project - Mitigations**

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	102	0	0.000	N-S(1):	0.470 *
	TH	2.00	219	1,067	0.301	N-S(2):	0.000
	LT	0.00	367	1,067	0.344 *	E-W(1):	0.179
Westbound	RT	1.00	204	1,067	0.019	E-W(2):	0.268 *
	TH	2.00	198	3,200	0.062 *		
	LT	1.00	120	1,600	0.075	V/C:	0.738
Northbound	RT	0.00	94	0	0.000	Lost Time:	0.100
	TH	2.00	175	2,134	0.126 *	ITS:	0.000
	LT	1.00	42	1,600	0.026		
Eastbound	RT	1.00	29	1,600	0.005	ICU:	0.838
	TH	2.00	333	3,200	0.104		
	LT	1.00	220	1,067	0.206 *	LOS:	D

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	115	0	0.000	N-S(1):	0.417 *
	TH	2.00	282	1,067	0.259 *	N-S(2):	0.000
	LT	0.00	156	1,067	0.146	E-W(1):	0.222
Westbound	RT	1.00	377	1,067	0.280 *	E-W(2):	0.450 *
	TH	2.00	276	3,200	0.086		
	LT	1.00	128	1,600	0.080	V/C:	0.867
Northbound	RT	0.00	91	0	0.000	Lost Time:	0.100
	TH	2.00	246	2,134	0.158 *	ITS:	0.000
	LT	1.00	79	1,600	0.049		
Eastbound	RT	1.00	105	1,600	0.041	ICU:	0.967
	TH	2.00	455	3,200	0.142		
	LT	1.00	181	1,067	0.170 *	LOS:	E

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **10 - I-210 WB Off-ramp & Central Ave**
Description: **Existing plus Project - Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : Y
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	1.00	7	1,600	0.004	*	N-S(1):	0.222	*
	TH	0.00	0	0	0.000		N-S(2):	0.000	
	LT	0.00	0	0	0.000		E-W(1):	0.213	
Westbound	RT	0.00	8	0	0.000		E-W(2):	0.329	*
	TH	1.00	514	1,600	0.326	*			
	LT	0.00	0	0	0.000		V/C:	0.551	
Northbound	RT	1.00	348	1,600	0.218	*	Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	298	1,600	0.186				
Eastbound	RT	0.00	0	0	0.000		ICU:	0.651	
	TH	1.00	336	1,600	0.213				
	LT	0.00	4	1,600	0.003	*	LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.88	23	1,415	0.014		N-S(1):	0.155	*
	TH	0.00	0	0	0.000		N-S(2):	0.000	
	LT	0.12	3	185	0.016	*	E-W(1):	0.263	
Westbound	RT	0.00	10	0	0.000		E-W(2):	0.330	*
	TH	1.00	512	1,600	0.326	*			
	LT	0.00	0	0	0.000		V/C:	0.485	
Northbound	RT	1.00	209	1,600	0.131		Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	222	1,600	0.139	*			
Eastbound	RT	0.00	0	0	0.000		ICU:	0.585	
	TH	1.00	414	1,600	0.263				
	LT	0.00	6	1,600	0.004	*	LOS:	A	

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **11 - Village Rd & Duarte Rd**
Description: **Existing plus Project - Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.000
	TH	0.00	0	0	0.000 *	N-S(2):	0.041 *
	LT	0.00	0	0	0.000	E-W(1):	0.353 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.132
	TH	2.00	421	3,200	0.132		
	LT	1.00	166	1,600	0.104 *	V/C:	0.394
Northbound	RT	1.00	19	1,600	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	66	1,600	0.041 *		
Eastbound	RT	0.00	262	0	0.000	ICU:	0.494
	TH	2.00	535	3,200	0.249 *		
	LT	0.00	0	0	0.000	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.110
	TH	0.00	0	0	0.000 *	N-S(2):	0.158 *
	LT	0.00	0	0	0.000	E-W(1):	0.212 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.153
	TH	2.00	490	3,200	0.153		
	LT	1.00	11	1,600	0.007 *	V/C:	0.370
Northbound	RT	1.00	181	1,600	0.110	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	252	1,600	0.158 *		
Eastbound	RT	0.00	43	0	0.000	ICU:	0.470
	TH	2.00	613	3,200	0.205 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **14 - Highland Ave & Huntington Dr**
Description: **Existing plus Project - Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements : NBR, SBR,
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	31	1,600	0.007	N-S(1):	0.099
	TH	2.00	167	3,200	0.041 *	N-S(2):	0.104 *
	LT	0.00	62	1,600	0.039	E-W(1):	0.379 *
Westbound	RT	1.00	70	1,600	0.024	E-W(2):	0.343
	TH	2.00	1,056	3,200	0.330		
	LT	1.00	442	1,600	0.276 *	V/C:	0.483
Northbound	RT	1.00	327	1,600	0.000	Lost Time:	0.100
	TH	2.00	91	3,200	0.060	ITS:	0.000
	LT	0.00	101	1,600	0.063 *		
Eastbound	RT	1.00	90	1,600	0.025	ICU:	0.583
	TH	2.00	329	3,200	0.103 *		
	LT	1.00	20	1,600	0.013	LOS:	A

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	43	1,600	0.016	N-S(1):	0.185 *
	TH	2.00	149	3,200	0.045	N-S(2):	0.132
	LT	0.00	94	1,600	0.059 *	E-W(1):	0.528 *
Westbound	RT	1.00	46	1,600	0.000	E-W(2):	0.161
	TH	2.00	481	3,200	0.150		
	LT	1.00	256	1,600	0.160 *	V/C:	0.713
Northbound	RT	1.00	457	1,600	0.126 *	Lost Time:	0.100
	TH	2.00	149	3,200	0.090	ITS:	0.000
	LT	0.00	139	1,600	0.087		
Eastbound	RT	1.00	150	1,600	0.050	ICU:	0.813
	TH	2.00	1,176	3,200	0.368 *		
	LT	1.00	17	1,600	0.011	LOS:	D

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **10 - I-210 WB Off-ramp & Central Ave**
Description: **Future Base - Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : Y
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	7	1,600	0.004 *	N-S(1):	0.247 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.218
Westbound	RT	0.00	8	0	0.000	E-W(2):	0.312 *
	TH	1.00	487	1,600	0.309 *		
	LT	0.00	0	0	0.000	V/C:	0.559
Northbound	RT	1.00	361	1,600	0.226	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	388	1,600	0.243 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.659
	TH	1.00	345	1,600	0.218		
	LT	0.00	4	1,600	0.003 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.89	24	1,422	0.015	N-S(1):	0.178 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	0.11	3	178	0.017 *	E-W(1):	0.267
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.322 *
	TH	1.00	498	1,600	0.318 *		
	LT	0.00	0	0	0.000	V/C:	0.500
Northbound	RT	1.00	173	1,600	0.108	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	258	1,600	0.161 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.600
	TH	1.00	421	1,600	0.267		
	LT	0.00	6	1,600	0.004 *	LOS:	A

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **11 - Village Rd & Duarte Rd**
Description: **Future Base - Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.000
	TH	0.00	0	0	0.000 *	N-S(2):	0.057 *
	LT	0.00	0	0	0.000	E-W(1):	0.453 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.108
	TH	2.00	347	3,200	0.108		
	LT	1.00	207	1,600	0.129 *	V/C:	0.510
Northbound	RT	1.00	24	1,600	0.000	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	91	1,600	0.057 *		
Eastbound	RT	0.00	404	0	0.000	ICU:	0.610
	TH	2.00	632	3,200	0.324 *		
	LT	0.00	0	0	0.000	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	0	0	0.000	N-S(1):	0.127
	TH	0.00	0	0	0.000 *	N-S(2):	0.243 *
	LT	0.00	0	0	0.000	E-W(1):	0.202 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.169
	TH	2.00	542	3,200	0.169		
	LT	1.00	17	1,600	0.011 *	V/C:	0.445
Northbound	RT	1.00	211	1,600	0.127	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	388	1,600	0.243 *		
Eastbound	RT	0.00	66	0	0.000	ICU:	0.545
	TH	2.00	545	3,200	0.191 *		
	LT	0.00	0	0	0.000	LOS:	A

* - Denotes critical movement

Project Title: Duarte
Intersection: 9 - Buena Vista St & Duarte Rd
Description: Future plus Project - Mitigations

		RR Crossing Movements		
Thru Lane:	1600 vph	1067 vph	N-S Split Phase :	Y
Left Lane:	1600 vph	1067 vph	E-W Split Phase :	N
Double Lt Penalty:	10 %		Lost Time (% of cycle) :	10
ITS:	0 %		V/C Round Off (decs.) :	3
OLA Movements :				
FF Movements:				

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	118	0	0.000	N-S(1):	0.661 *
	TH	2.00	308	1,067	0.399	N-S(2):	0.000
	LT	0.00	522	1,067	0.489 *	E-W(1):	0.201
Westbound	RT	1.00	234	1,067	0.000	E-W(2):	0.291 *
	TH	2.00	207	3,200	0.065 *		
	LT	1.00	136	1,600	0.085	V/C:	0.952
Northbound	RT	0.00	173	0	0.000	Lost Time:	0.100
	TH	2.00	194	2,134	0.172 *	ITS:	0.000
	LT	1.00	45	1,600	0.028		
Eastbound	RT	1.00	42	1,600	0.012	ICU:	1.052
	TH	2.00	371	3,200	0.116		
	LT	1.00	241	1,067	0.226 *	LOS:	F

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	146	0	0.000	N-S(1):	0.500 *
	TH	2.00	304	1,067	0.297 *	N-S(2):	0.000
	LT	0.00	183	1,067	0.172	E-W(1):	0.273
Westbound	RT	1.00	531	1,067	0.412 *	E-W(2):	0.622 *
	TH	2.00	309	3,200	0.097		
	LT	1.00	200	1,600	0.125	V/C:	1.122
Northbound	RT	0.00	107	0	0.000	Lost Time:	0.100
	TH	2.00	327	2,134	0.203 *	ITS:	0.000
	LT	1.00	93	1,600	0.058		
Eastbound	RT	1.00	110	1,600	0.040	ICU:	1.222
	TH	2.00	474	3,200	0.148		
	LT	1.00	224	1,067	0.210 *	LOS:	F

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **10 - I-210 WB Off-ramp & Central Ave**
Description: **Future plus Project - Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : Y
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	7	1,600	0.004 *	N-S(1):	0.247 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	0.00	0	0	0.000	E-W(1):	0.219
Westbound	RT	0.00	8	0	0.000	E-W(2):	0.339 *
	TH	1.00	529	1,600	0.336 *		
	LT	0.00	0	0	0.000	V/C:	0.586
Northbound	RT	1.00	375	1,600	0.234	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	388	1,600	0.243 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.686
	TH	1.00	347	1,600	0.219		
	LT	0.00	4	1,600	0.003 *	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.89	24	1,422	0.015	N-S(1):	0.178 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	0.11	3	178	0.017 *	E-W(1):	0.271
Westbound	RT	0.00	10	0	0.000	E-W(2):	0.340 *
	TH	1.00	527	1,600	0.336 *		
	LT	0.00	0	0	0.000	V/C:	0.518
Northbound	RT	1.00	217	1,600	0.136	Lost Time:	0.100
	TH	0.00	0	0	0.000	ITS:	0.000
	LT	1.00	258	1,600	0.161 *		
Eastbound	RT	0.00	0	0	0.000	ICU:	0.618
	TH	1.00	427	1,600	0.271		
	LT	0.00	6	1,600	0.004 *	LOS:	B

* - Denotes critical movement

Project Title: **Duarte**
Intersection: **11 - Village Rd & Duarte Rd**
Description: **Future plus Project - Mitigations**

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements :
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.000	
	TH	0.00	0	0	0.000	*	N-S(2):	0.057	*
	LT	0.00	0	0	0.000		E-W(1):	0.463	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.141	
	TH	2.00	451	3,200	0.141				
	LT	1.00	207	1,600	0.129	*	V/C:	0.520	
Northbound	RT	1.00	24	1,600	0.000		Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	91	1,600	0.057	*			
Eastbound	RT	0.00	404	0	0.000		ICU:	0.620	
	TH	2.00	665	3,200	0.334	*			
	LT	0.00	0	0	0.000		LOS:	B	

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C		ICU ANALYSIS		
Southbound	RT	0.00	0	0	0.000		N-S(1):	0.127	
	TH	0.00	0	0	0.000	*	N-S(2):	0.243	*
	LT	0.00	0	0	0.000		E-W(1):	0.234	*
Westbound	RT	0.00	0	0	0.000		E-W(2):	0.191	
	TH	2.00	612	3,200	0.191				
	LT	1.00	17	1,600	0.011	*	V/C:	0.477	
Northbound	RT	1.00	211	1,600	0.127		Lost Time:	0.100	
	TH	0.00	0	0	0.000		ITS:	0.000	
	LT	1.00	388	1,600	0.243	*			
Eastbound	RT	0.00	66	0	0.000		ICU:	0.577	
	TH	2.00	649	3,200	0.223	*			
	LT	0.00	0	0	0.000		LOS:	A	

* - Denotes critical movement

Project Title: Duarte
Intersection: 14 - Highland Ave & Huntington Dr
Description: Future plus Project - Mitigations

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 10 %
ITS: 0 %
OLA Movements : NBR, SBR,
FF Movements:

N-S Split Phase : N
E-W Split Phase : N
Lost Time (% of cycle) : 10
V/C Round Off (decs.) : 3

Date/Time: **AM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	32	1,600	0.007	N-S(1):	0.102
	TH	2.00	175	3,200	0.042 *	N-S(2):	0.107 *
	LT	0.00	64	1,600	0.040	E-W(1):	0.436 *
Westbound	RT	1.00	72	1,600	0.025	E-W(2):	0.378
	TH	2.00	1,167	3,200	0.365		
	LT	1.00	499	1,600	0.312 *	V/C:	0.543
Northbound	RT	1.00	341	1,600	0.000	Lost Time:	0.100
	TH	2.00	95	3,200	0.062	ITS:	0.000
	LT	0.00	104	1,600	0.065 *		
Eastbound	RT	1.00	93	1,600	0.026	ICU:	0.643
	TH	2.00	397	3,200	0.124 *		
	LT	1.00	21	1,600	0.013	LOS:	B

Date/Time: **PM PEAK HOUR**

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	44	1,600	0.016	N-S(1):	0.212 *
	TH	2.00	154	3,200	0.046	N-S(2):	0.135
	LT	0.00	97	1,600	0.061 *	E-W(1):	0.579 *
Westbound	RT	1.00	47	1,600	0.000	E-W(2):	0.208
	TH	2.00	629	3,200	0.197		
	LT	1.00	268	1,600	0.168 *	V/C:	0.791
Northbound	RT	1.00	509	1,600	0.151 *	Lost Time:	0.100
	TH	2.00	157	3,200	0.094	ITS:	0.000
	LT	0.00	143	1,600	0.089		
Eastbound	RT	1.00	154	1,600	0.052	ICU:	0.891
	TH	2.00	1,316	3,200	0.411 *		
	LT	1.00	18	1,600	0.011	LOS:	D

* - Denotes critical movement

UNSIGNALIZED INTERSECTIONS LEVEL OF SERVICE

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣✣			✣✣	
Traffic Vol, veh/h	5	3	18	27	2	39	8	500	31	10	647	15
Future Vol, veh/h	5	3	18	27	2	39	8	500	31	10	647	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	20	29	2	42	9	543	34	11	703	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1024	1328	360	953	1319	289	719	0	0	577	0	0
Stage 1	733	733	-	578	578	-	-	-	-	-	-	-
Stage 2	291	595	-	375	741	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	190	154	637	214	156	708	878	-	-	993	-	-
Stage 1	378	424	-	468	499	-	-	-	-	-	-	-
Stage 2	693	491	-	618	421	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	149	637	199	151	708	878	-	-	993	-	-
Mov Cap-2 Maneuver	172	149	-	199	151	-	-	-	-	-	-	-
Stage 1	372	416	-	461	492	-	-	-	-	-	-	-
Stage 2	639	484	-	583	413	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.7	18.9	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	878	-	-	336	333	993	-	-
HCM Lane V/C Ratio	0.01	-	-	0.084	0.222	0.011	-	-
HCM Control Delay (s)	9.1	0.1	-	16.7	18.9	8.7	0.1	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.8	0	-	-

Intersection	
Int Delay, s/veh	41.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		✥	
Traffic Vol, veh/h	4	334	0	0	472	8	298	1	334	0	0	7
Future Vol, veh/h	4	334	0	0	472	8	298	1	334	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	363	0	0	513	9	324	1	363	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	522	0	-	-	-	0	893	893	363	1071	889	518
Stage 1	-	-	-	-	-	-	371	371	-	518	518	-
Stage 2	-	-	-	-	-	-	522	522	-	553	371	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1044	-	0	0	-	-	~ 262	281	682	198	282	558
Stage 1	-	-	0	0	-	-	649	620	-	541	533	-
Stage 2	-	-	0	0	-	-	538	531	-	517	620	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1044	-	-	-	-	-	~ 258	280	682	92	281	558
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 258	280	-	92	281	-
Stage 1	-	-	-	-	-	-	646	617	-	538	533	-
Stage 2	-	-	-	-	-	-	531	531	-	240	617	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	94.4	11.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	258	682	1044	-	-	-	558
HCM Lane V/C Ratio	1.255	0.532	0.004	-	-	-	0.014
HCM Control Delay (s)	182.2	16.1	8.5	0	-	-	11.5
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	15.9	3.2	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

11: Village Rd & Duarte Rd

Intersection	
Int Delay, s/veh	4.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	502	262	166	317	66	19
Future Vol, veh/h	502	262	166	317	66	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	546	285	180	345	72	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	831	0	1222	416
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	533	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	797	-	172	585
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	797	-	133	585
Mov Cap-2 Maneuver	-	-	-	-	133	-
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	553	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	49.1
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	133	585	-	-	797	-
HCM Lane V/C Ratio	0.539	0.035	-	-	0.226	-
HCM Control Delay (s)	60	11.4	-	-	10.8	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	2.6	0.1	-	-	0.9	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	46	18	0	4	11	16	5	8	2	91	5	28
Future Vol, veh/h	46	18	0	4	11	16	5	8	2	91	5	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	20	0	4	12	17	5	9	2	99	5	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.2	7.4	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	72%	13%	73%
Vol Thru, %	53%	28%	35%	4%
Vol Right, %	13%	0%	52%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	64	31	124
LT Vol	5	46	4	91
Through Vol	8	18	11	5
RT Vol	2	0	16	28
Lane Flow Rate	16	70	34	135
Geometry Grp	1	1	1	1
Degree of Util (X)	0.019	0.084	0.037	0.155
Departure Headway (Hd)	4.205	4.366	3.966	4.137
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	839	810	886	860
Service Time	2.293	2.451	2.065	2.197
HCM Lane V/C Ratio	0.019	0.086	0.038	0.157
HCM Control Delay	7.4	7.9	7.2	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.1	0.5

16: Highland Ave & Evergreen St

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↱			↰↑↱	
Traffic Vol, veh/h	23	2	51	0	2	13	5	348	3	90	700	28
Future Vol, veh/h	23	2	51	0	2	13	5	348	3	90	700	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	2	55	0	2	14	5	378	3	98	761	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1172	1363	396	968	1377	191	791	0	0	381	0	0
Stage 1	972	972	-	390	390	-	-	-	-	-	-	-
Stage 2	200	391	-	578	987	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	148	147	603	208	144	818	825	-	-	1174	-	-
Stage 1	271	329	-	606	606	-	-	-	-	-	-	-
Stage 2	783	606	-	468	324	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	126	124	603	164	121	818	825	-	-	1174	-	-
Mov Cap-2 Maneuver	126	124	-	164	121	-	-	-	-	-	-	-
Stage 1	269	280	-	601	601	-	-	-	-	-	-	-
Stage 2	761	601	-	358	275	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.3	13.1	0.1	1.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	825	-	-	268	463	1174	-	-
HCM Lane V/C Ratio	0.007	-	-	0.308	0.035	0.083	-	-
HCM Control Delay (s)	9.4	0	-	24.3	13.1	8.3	0.5	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0.1	0.3	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	2	8	38	16	1	24	3	737	27	30	418	23
Future Vol, veh/h	2	8	38	16	1	24	3	737	27	30	418	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	9	41	17	1	26	3	801	29	33	454	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	940	1369	240	1120	1367	415	479	0	0	830	0	0
Stage 1	533	533	-	822	822	-	-	-	-	-	-	-
Stage 2	407	836	-	298	545	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	218	145	761	161	146	586	1080	-	-	798	-	-
Stage 1	498	523	-	334	386	-	-	-	-	-	-	-
Stage 2	592	381	-	686	517	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	136	761	138	137	586	1080	-	-	798	-	-
Mov Cap-2 Maneuver	197	136	-	138	137	-	-	-	-	-	-	-
Stage 1	496	493	-	332	384	-	-	-	-	-	-	-
Stage 2	561	379	-	601	488	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	22.5	0	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1080	-	-	404	250	798	-	-
HCM Lane V/C Ratio	0.003	-	-	0.129	0.178	0.041	-	-
HCM Control Delay (s)	8.3	0	-	15.2	22.5	9.7	0.2	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	28.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		↰↑↱	
Traffic Vol, veh/h	6	408	0	0	483	10	222	4	165	3	0	23
Future Vol, veh/h	6	408	0	0	483	10	222	4	165	3	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	443	0	0	525	11	241	4	179	3	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	536	0	-	-	-	0	1000	993	443	1080	988	531
Stage 1	-	-	-	-	-	-	457	457	-	531	531	-
Stage 2	-	-	-	-	-	-	543	536	-	549	457	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1032	-	0	0	-	-	~ 222	245	615	196	247	548
Stage 1	-	-	0	0	-	-	583	568	-	532	526	-
Stage 2	-	-	0	0	-	-	524	523	-	520	568	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1032	-	-	-	-	-	~ 210	243	615	136	245	548
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 210	243	-	136	245	-
Stage 1	-	-	-	-	-	-	578	563	-	527	526	-
Stage 2	-	-	-	-	-	-	500	523	-	362	563	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	94.9	14.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	210	615	1032	-	-	-	406
HCM Lane V/C Ratio	1.149	0.292	0.006	-	-	-	0.07
HCM Control Delay (s)	155.6	13.2	8.5	0	-	-	14.5
HCM Lane LOS	F	B	A	A	-	-	B
HCM 95th %tile Q(veh)	11.7	1.2	0	-	-	-	0.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	13.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	509	43	11	420	252	181
Future Vol, veh/h	509	43	11	420	252	181
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	553	47	12	457	274	197

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	600	0	830	300
Stage 1	-	-	-	-	577	-
Stage 2	-	-	-	-	253	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	973	-	308	696
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	973	-	304	696
Mov Cap-2 Maneuver	-	-	-	-	304	-
Stage 1	-	-	-	-	519	-
Stage 2	-	-	-	-	766	-

Approach	EB		WB		NB
HCM Control Delay, s	0		0.2		44.3
HCM LOS					E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	696	-	-	973	-
HCM Lane V/C Ratio	0.901	0.283	-	-	0.012	-
HCM Control Delay (s)	67.4	12.2	-	-	8.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	8.4	1.2	-	-	0	-

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	32	18	1	0	22	29	1	9	3	45	14	35
Future Vol, veh/h	32	18	1	0	22	29	1	9	3	45	14	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	20	1	0	24	32	1	10	3	49	15	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.1	7.2	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	63%	0%	48%
Vol Thru, %	69%	35%	43%	15%
Vol Right, %	23%	2%	57%	37%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	51	51	94
LT Vol	1	32	0	45
Through Vol	9	18	22	14
RT Vol	3	1	29	35
Lane Flow Rate	14	55	55	102
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.066	0.059	0.114
Departure Headway (Hd)	4.081	4.294	3.838	4.008
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	867	828	923	888
Service Time	2.154	2.354	1.904	2.063
HCM Lane V/C Ratio	0.016	0.066	0.06	0.115
HCM Control Delay	7.2	7.7	7.1	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0.4

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	35	1	20	3	0	101	5	935	5	13	256	17
Future Vol, veh/h	35	1	20	3	0	101	5	935	5	13	256	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1	22	3	0	110	5	1016	5	14	278	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	833	1346	148	1197	1353	511	296	0	0	1021	0	0
Stage 1	315	315	-	1029	1029	-	-	-	-	-	-	-
Stage 2	518	1031	-	168	324	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	261	150	872	141	149	508	1262	-	-	675	-	-
Stage 1	671	654	-	250	309	-	-	-	-	-	-	-
Stage 2	509	309	-	817	648	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	145	872	133	144	508	1262	-	-	675	-	-
Mov Cap-2 Maneuver	199	145	-	133	144	-	-	-	-	-	-	-
Stage 1	665	638	-	248	306	-	-	-	-	-	-	-
Stage 2	395	306	-	775	632	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22	15.1	0	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1262	-	-	272	470	675	-	-
HCM Lane V/C Ratio	0.004	-	-	0.224	0.241	0.021	-	-
HCM Control Delay (s)	7.9	0	-	22	15.1	10.4	0.1	-
HCM Lane LOS	A	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	5	4	24	30	5	39	8	559	32	10	659	15
Future Vol, veh/h	5	4	24	30	5	39	8	559	32	10	659	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	4	26	33	5	42	9	608	35	11	716	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1071	1407	366	1026	1398	322	732	0	0	643	0	0
Stage 1	746	746	-	644	644	-	-	-	-	-	-	-
Stage 2	325	661	-	382	754	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	175	138	631	189	140	674	868	-	-	938	-	-
Stage 1	372	419	-	428	466	-	-	-	-	-	-	-
Stage 2	661	458	-	612	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	133	631	172	135	674	868	-	-	938	-	-
Mov Cap-2 Maneuver	155	133	-	172	135	-	-	-	-	-	-	-
Stage 1	366	411	-	421	459	-	-	-	-	-	-	-
Stage 2	602	451	-	569	407	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	23.4	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	868	-	-	329	275	938	-	-
HCM Lane V/C Ratio	0.01	-	-	0.109	0.292	0.012	-	-
HCM Control Delay (s)	9.2	0.1	-	17.3	23.4	8.9	0.1	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1.2	0	-	-

Intersection	
Int Delay, s/veh	48.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		✥	
Traffic Vol, veh/h	4	336	0	0	514	8	298	0	348	0	0	7
Future Vol, veh/h	4	336	0	0	514	8	298	0	348	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	365	0	0	559	9	324	0	378	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	-	-	-	0	941	-	365	1126	937	564
Stage 1	-	-	-	-	-	-	373	-	-	564	564	-
Stage 2	-	-	-	-	-	-	568	-	-	562	373	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1004	-	0	0	-	-	~ 243	0	680	182	265	525
Stage 1	-	-	0	0	-	-	648	0	-	510	508	-
Stage 2	-	-	0	0	-	-	508	0	-	512	618	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1004	-	-	-	-	-	~ 239	-	680	80	264	525
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 239	-	-	80	264	-
Stage 1	-	-	-	-	-	-	645	-	-	507	508	-
Stage 2	-	-	-	-	-	-	501	-	-	226	615	-

Approach	EB			WB			NB			SB
HCM Control Delay, s	0.1			0			112.7			12
HCM LOS							F			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	239	680	1004	-	-	-	525
HCM Lane V/C Ratio	1.355	0.556	0.004	-	-	-	0.014
HCM Control Delay (s)	224.8	16.7	8.6	0	-	-	12
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	17.5	3.4	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	535	262	166	421	66	19
Future Vol, veh/h	535	262	166	421	66	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	582	285	180	458	72	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	867	0	1314	434
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	589	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	772	-	150	570
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	772	-	115	570
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	397	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	63.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	115	570	-	-	772	-
HCM Lane V/C Ratio	0.624	0.036	-	-	0.234	-
HCM Control Delay (s)	78	11.6	-	-	11.1	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	3.1	0.1	-	-	0.9	-

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	46	20	0	4	17	22	5	8	2	99	5	28
Future Vol, veh/h	46	20	0	4	17	22	5	8	2	99	5	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	22	0	4	18	24	5	9	2	108	5	30
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.3	7.4	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	70%	9%	75%
Vol Thru, %	53%	30%	40%	4%
Vol Right, %	13%	0%	51%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	66	43	132
LT Vol	5	46	4	99
Through Vol	8	20	17	5
RT Vol	2	0	22	28
Lane Flow Rate	16	72	47	143
Geometry Grp	1	1	1	1
Degree of Util (X)	0.02	0.087	0.053	0.166
Departure Headway (Hd)	4.339	4.389	4.085	4.175
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	830	803	882	849
Service Time	2.341	2.485	2.087	2.246
HCM Lane V/C Ratio	0.019	0.09	0.053	0.168
HCM Control Delay	7.4	7.9	7.3	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0.6

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			↰↑↱			↰↑↱	
Traffic Vol, veh/h	22	2	50	0	2	13	7	512	3	90	748	31
Future Vol, veh/h	22	2	50	0	2	13	7	512	3	90	748	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	2	54	0	2	14	8	557	3	98	813	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1322	1602	424	1179	1618	280	847	0	0	560	0	0
Stage 1	1026	1026	-	575	575	-	-	-	-	-	-	-
Stage 2	296	576	-	604	1043	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	114	105	579	146	102	717	786	-	-	1007	-	-
Stage 1	251	310	-	470	501	-	-	-	-	-	-	-
Stage 2	688	500	-	452	305	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	93	84	579	110	82	717	786	-	-	1007	-	-
Mov Cap-2 Maneuver	93	84	-	110	82	-	-	-	-	-	-	-
Stage 1	247	253	-	463	493	-	-	-	-	-	-	-
Stage 2	661	493	-	331	249	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.8	15.7	0.2	1.5
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	786	-	-	213	353	1007	-	-
HCM Lane V/C Ratio	0.01	-	-	0.378	0.046	0.097	-	-
HCM Control Delay (s)	9.6	0.1	-	31.8	15.7	9	0.7	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	0.1	0.3	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	2	11	56	18	3	24	3	777	30	30	456	23
Future Vol, veh/h	2	11	56	18	3	24	3	777	30	30	456	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	12	61	20	3	26	3	845	33	33	496	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1005	1459	261	1188	1455	439	521	0	0	878	0	0
Stage 1	575	575	-	868	868	-	-	-	-	-	-	-
Stage 2	430	884	-	320	587	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	196	128	738	144	129	566	1041	-	-	765	-	-
Stage 1	470	501	-	314	368	-	-	-	-	-	-	-
Stage 2	574	362	-	666	495	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	174	119	738	116	120	566	1041	-	-	765	-	-
Mov Cap-2 Maneuver	174	119	-	116	120	-	-	-	-	-	-	-
Stage 1	467	470	-	312	366	-	-	-	-	-	-	-
Stage 2	539	360	-	559	465	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.6	28.4	0	0.9
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1041	-	-	384	202	765	-	-
HCM Lane V/C Ratio	0.003	-	-	0.195	0.242	0.043	-	-
HCM Control Delay (s)	8.5	0	-	16.6	28.4	9.9	0.3	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.9	0.1	-	-

Intersection	
Int Delay, s/veh	31.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		✥	
Traffic Vol, veh/h	6	414	0	0	512	10	222	0	209	3	0	23
Future Vol, veh/h	6	414	0	0	512	10	222	0	209	3	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	450	0	0	557	11	241	0	227	3	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	-	-	-	0	1039	-	450	1141	1027	563
Stage 1	-	-	-	-	-	-	464	-	-	563	563	-
Stage 2	-	-	-	-	-	-	575	-	-	578	464	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1004	-	0	0	-	-	~ 209	0	609	178	234	526
Stage 1	-	-	0	0	-	-	578	0	-	511	509	-
Stage 2	-	-	0	0	-	-	503	0	-	501	564	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1004	-	-	-	-	-	~ 198	-	609	111	232	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 198	-	-	111	232	-
Stage 1	-	-	-	-	-	-	573	-	-	506	509	-
Stage 2	-	-	-	-	-	-	479	-	-	311	559	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0			101.6			15.6		
HCM LOS							F			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	198	609	1004	-	-	-	367
HCM Lane V/C Ratio	1.219	0.373	0.006	-	-	-	0.077
HCM Control Delay (s)	183.7	14.4	8.6	0	-	-	15.6
HCM Lane LOS	F	B	A	A	-	-	C
HCM 95th %tile Q(veh)	12.6	1.7	0	-	-	-	0.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	23.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	613	43	11	490	252	181
Future Vol, veh/h	613	43	11	490	252	181
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	666	47	12	533	274	197

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	713	0	981	357
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	291	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	883	-	~ 247	639
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	733	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	883	-	~ 244	639
Mov Cap-2 Maneuver	-	-	-	-	~ 244	-
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	85.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	244	639	-	-	883	-
HCM Lane V/C Ratio	1.123	0.308	-	-	0.014	-
HCM Control Delay (s)	138	13.1	-	-	9.1	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	12.2	1.3	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	32	24	1	0	26	33	1	9	3	69	14	35
Future Vol, veh/h	32	24	1	0	26	33	1	9	3	69	14	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	26	1	0	28	36	1	10	3	75	15	38
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.3	7.3	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	56%	0%	58%
Vol Thru, %	69%	42%	44%	12%
Vol Right, %	23%	2%	56%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	57	59	118
LT Vol	1	32	0	69
Through Vol	9	24	26	14
RT Vol	3	1	33	35
Lane Flow Rate	14	62	64	128
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.075	0.069	0.146
Departure Headway (Hd)	4.129	4.335	3.894	4.102
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	853	817	906	866
Service Time	2.221	2.415	1.981	2.166
HCM Lane V/C Ratio	0.016	0.076	0.071	0.148
HCM Control Delay	7.3	7.8	7.3	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0.5

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	44	1	26	3	0	101	5	1036	5	13	416	16
Future Vol, veh/h	44	1	26	3	0	101	5	1036	5	13	416	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	1	28	3	0	110	5	1126	5	14	452	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1062	1630	235	1394	1636	566	469	0	0	1131	0	0
Stage 1	489	489	-	1139	1139	-	-	-	-	-	-	-
Stage 2	573	1141	-	255	497	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	178	101	767	101	100	467	1089	-	-	613	-	-
Stage 1	529	548	-	214	274	-	-	-	-	-	-	-
Stage 2	472	274	-	727	543	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	132	97	767	93	96	467	1089	-	-	613	-	-
Mov Cap-2 Maneuver	132	97	-	93	96	-	-	-	-	-	-	-
Stage 1	523	531	-	211	271	-	-	-	-	-	-	-
Stage 2	357	271	-	677	526	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36.9	16.8	0	0.5
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1089	-	-	188	418	613	-	-
HCM Lane V/C Ratio	0.005	-	-	0.41	0.27	0.023	-	-
HCM Control Delay (s)	8.3	0	-	36.9	16.8	11	0.2	-
HCM Lane LOS	A	A	-	E	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1.8	1.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			↰↑↱			↰↑↱	
Traffic Vol, veh/h	5	3	19	28	2	40	8	568	32	10	908	15
Future Vol, veh/h	5	3	19	28	2	40	8	568	32	10	908	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	3	21	30	2	43	9	617	35	11	987	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1345	1687	502	1170	1678	326	1003	0	0	652	0	0
Stage 1	1017	1017	-	653	653	-	-	-	-	-	-	-
Stage 2	328	670	-	517	1025	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	110	93	515	148	94	670	686	-	-	930	-	-
Stage 1	254	313	-	423	462	-	-	-	-	-	-	-
Stage 2	659	454	-	509	311	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	97	89	515	133	90	670	686	-	-	930	-	-
Mov Cap-2 Maneuver	97	89	-	133	90	-	-	-	-	-	-	-
Stage 1	249	305	-	414	452	-	-	-	-	-	-	-
Stage 2	600	444	-	470	303	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.8	26.9	0.2	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	686	-	-	221	239	930	-	-
HCM Lane V/C Ratio	0.013	-	-	0.133	0.318	0.012	-	-
HCM Control Delay (s)	10.3	0.1	-	23.8	26.9	8.9	0.1	-
HCM Lane LOS	B	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	1.3	0	-	-

Intersection	
Int Delay, s/veh	94.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		↰		↱		✥	
Traffic Vol, veh/h	4	345	0	0	487	8	388	0	361	0	0	7
Future Vol, veh/h	4	345	0	0	487	8	388	0	361	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	375	0	0	529	9	422	0	392	0	0	8

Major/Minor	Major1				Major2		Minor1			Minor2		
Conflicting Flow All	538	0	-	-	-	0	921	-	375	1113	917	534
Stage 1	-	-	-	-	-	-	383	-	-	534	534	-
Stage 2	-	-	-	-	-	-	538	-	-	579	383	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1030	-	0	0	-	-	~ 251	0	671	186	272	546
Stage 1	-	-	0	0	-	-	640	0	-	530	524	-
Stage 2	-	-	0	0	-	-	527	0	-	501	612	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1030	-	-	-	-	-	~ 246	-	671	77	271	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 246	-	-	77	271	-
Stage 1	-	-	-	-	-	-	637	-	-	527	524	-
Stage 2	-	-	-	-	-	-	520	-	-	207	609	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	201.8	11.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	246	671	1030	-	-	-	546
HCM Lane V/C Ratio	1.714	0.585	0.004	-	-	-	0.014
HCM Control Delay (s)	$ 373.1	17.6	8.5	0	-	-	11.7
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	27.7	3.8	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	22.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	632	404	207	347	91	24
Future Vol, veh/h	632	404	207	347	91	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	687	439	225	377	99	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1126	0	1546	563
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	639	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	616	-	105	470
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	616	-	~ 67	470
Mov Cap-2 Maneuver	-	-	-	-	~ 67	-
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	310	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.3	$ 305.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	67	470	-	-	616	-
HCM Lane V/C Ratio	1.476	0.056	-	-	0.365	-
HCM Control Delay (s)	$ 383.1	13.1	-	-	14.2	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	8.4	0.2	-	-	1.7	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	47	19	0	4	11	17	5	8	2	94	5	29
Future Vol, veh/h	47	19	0	4	11	17	5	8	2	94	5	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	21	0	4	12	18	5	9	2	102	5	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.2	7.4	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	71%	12%	73%
Vol Thru, %	53%	29%	34%	4%
Vol Right, %	13%	0%	53%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	66	32	128
LT Vol	5	47	4	94
Through Vol	8	19	11	5
RT Vol	2	0	17	29
Lane Flow Rate	16	72	35	139
Geometry Grp	1	1	1	1
Degree of Util (X)	0.019	0.087	0.039	0.16
Departure Headway (Hd)	4.214	4.374	4.067	4.142
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	836	808	886	858
Service Time	2.308	2.461	2.067	2.207
HCM Lane V/C Ratio	0.019	0.089	0.04	0.162
HCM Control Delay	7.4	7.9	7.2	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.1	0.6

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	24	2	53	0	2	13	5	367	3	93	789	29
Future Vol, veh/h	24	2	53	0	2	13	5	367	3	93	789	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	2	58	0	2	14	5	399	3	101	858	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1287	1488	445	1043	1503	201	890	0	0	402	0	0
Stage 1	1076	1076	-	411	411	-	-	-	-	-	-	-
Stage 2	211	412	-	632	1092	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	121	123	561	184	120	806	757	-	-	1153	-	-
Stage 1	234	294	-	589	593	-	-	-	-	-	-	-
Stage 2	771	593	-	435	289	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	101	101	561	140	98	806	757	-	-	1153	-	-
Mov Cap-2 Maneuver	101	101	-	140	98	-	-	-	-	-	-	-
Stage 1	232	243	-	584	588	-	-	-	-	-	-	-
Stage 2	748	588	-	320	239	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.7	14.1	0.1	1.4
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	757	-	-	224	411	1153	-	-
HCM Lane V/C Ratio	0.007	-	-	0.383	0.04	0.088	-	-
HCM Control Delay (s)	9.8	0	-	30.7	14.1	8.4	0.6	-
HCM Lane LOS	A	A	-	D	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.7	0.1	0.3	-	-

8: 3 Ranch Rd & Buena Vista St

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥✥			✥✥	
Traffic Vol, veh/h	2	8	39	17	1	25	3	1015	28	31	496	24
Future Vol, veh/h	2	8	39	17	1	25	3	1015	28	31	496	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	9	42	18	1	27	3	1103	30	34	539	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1178	1759	283	1466	1757	567	565	0	0	1133	0	0
Stage 1	620	620	-	1124	1124	-	-	-	-	-	-	-
Stage 2	558	1139	-	342	633	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	146	84	714	89	84	467	1003	-	-	612	-	-
Stage 1	442	478	-	219	279	-	-	-	-	-	-	-
Stage 2	482	274	-	646	472	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	127	77	714	71	77	467	1003	-	-	612	-	-
Mov Cap-2 Maneuver	127	77	-	71	77	-	-	-	-	-	-	-
Stage 1	438	439	-	217	277	-	-	-	-	-	-	-
Stage 2	449	272	-	547	434	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.8	42.7	0	1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1003	-	-	281	141	612	-	-
HCM Lane V/C Ratio	0.003	-	-	0.19	0.331	0.055	-	-
HCM Control Delay (s)	8.6	0	-	20.8	42.7	11.2	0.4	-
HCM Lane LOS	A	A	-	C	E	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1.3	0.2	-	-

Intersection	
Int Delay, s/veh	49.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		↰		↱		✥	
Traffic Vol, veh/h	6	421	0	0	498	10	258	0	173	3	0	24
Future Vol, veh/h	6	421	0	0	498	10	258	0	173	3	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	458	0	0	541	11	280	0	188	3	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	552	0	-	-	-	0	1032	-	458	1113	1019	547
Stage 1	-	-	-	-	-	-	472	-	-	547	547	-
Stage 2	-	-	-	-	-	-	560	-	-	566	472	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1018	-	0	0	-	-	~ 211	0	603	186	237	537
Stage 1	-	-	0	0	-	-	573	0	-	521	517	-
Stage 2	-	-	0	0	-	-	513	0	-	509	559	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1018	-	-	-	-	-	~ 199	-	603	127	235	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 199	-	-	127	235	-
Stage 1	-	-	-	-	-	-	568	-	-	516	517	-
Stage 2	-	-	-	-	-	-	488	-	-	347	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	159	14.8
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	199	603	1018	-	-	-	395
HCM Lane V/C Ratio	1.409	0.312	0.006	-	-	-	0.074
HCM Control Delay (s)	256.4	13.7	8.6	0	-	-	14.8
HCM Lane LOS	F	B	A	A	-	-	B
HCM 95th %tile Q(veh)	16.5	1.3	0	-	-	-	0.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	80.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	545	66	17	542	388	211
Future Vol, veh/h	545	66	17	542	388	211
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	592	72	18	589	422	229

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	664	0	959	332
Stage 1	-	-	-	-	628	-
Stage 2	-	-	-	-	331	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	921	-	~ 255	664
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	700	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	921	-	~ 250	664
Mov Cap-2 Maneuver	-	-	-	-	~ 250	-
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	238.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	250	664	-	-	921	-
HCM Lane V/C Ratio	1.687	0.345	-	-	0.02	-
HCM Control Delay (s)	$ 360.6	13.3	-	-	9	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	27.3	1.5	-	-	0.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	33	19	1	0	23	30	1	9	3	46	14	36
Future Vol, veh/h	33	19	1	0	23	30	1	9	3	46	14	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	21	1	0	25	33	1	10	3	50	15	39
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	7.2	7.2	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	62%	0%	48%
Vol Thru, %	69%	36%	43%	15%
Vol Right, %	23%	2%	57%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	53	53	96
LT Vol	1	33	0	46
Through Vol	9	19	23	14
RT Vol	3	1	30	36
Lane Flow Rate	14	58	58	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.069	0.062	0.116
Departure Headway (Hd)	4.091	4.299	3.845	4.014
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	864	827	921	886
Service Time	2.168	2.36	1.912	2.073
HCM Lane V/C Ratio	0.016	0.07	0.063	0.117
HCM Control Delay	7.2	7.7	7.2	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0.4

16: Highland Ave & Evergreen St

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↱			↰↑↱	
Traffic Vol, veh/h	36	1	21	3	0	104	5	1011	5	13	275	18
Future Vol, veh/h	36	1	21	3	0	104	5	1011	5	13	275	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	1	23	3	0	113	5	1099	5	14	299	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	897	1451	160	1290	1459	552	319	0	0	1104	0	0
Stage 1	337	337	-	1112	1112	-	-	-	-	-	-	-
Stage 2	560	1114	-	178	347	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	235	130	857	121	128	477	1238	-	-	628	-	-
Stage 1	651	640	-	223	282	-	-	-	-	-	-	-
Stage 2	480	282	-	806	633	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	174	125	857	114	123	477	1238	-	-	628	-	-
Mov Cap-2 Maneuver	174	125	-	114	123	-	-	-	-	-	-	-
Stage 1	644	623	-	221	279	-	-	-	-	-	-	-
Stage 2	363	279	-	762	616	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25	16.2	0	0.6
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1238	-	-	242	438	628	-	-
HCM Lane V/C Ratio	0.004	-	-	0.261	0.266	0.023	-	-
HCM Control Delay (s)	7.9	0	-	25	16.2	10.9	0.1	-
HCM Lane LOS	A	A	-	D	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1	1.1	0.1	-	-

HCM 2010 TWSC
8: 3 Ranch Rd & Buena Vista St

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			↰↑↱			↰↑↱	
Traffic Vol, veh/h	5	4	25	31	5	40	8	627	33	10	920	15
Future Vol, veh/h	5	4	25	31	5	40	8	627	33	10	920	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	4	27	34	5	43	9	682	36	11	1000	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1392	1766	508	1242	1756	359	1016	0	0	718	0	0
Stage 1	1030	1030	-	718	718	-	-	-	-	-	-	-
Stage 2	362	736	-	524	1038	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	101	83	510	131	84	638	678	-	-	879	-	-
Stage 1	250	309	-	386	431	-	-	-	-	-	-	-
Stage 2	629	423	-	504	306	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	86	79	510	114	80	638	678	-	-	879	-	-
Mov Cap-2 Maneuver	86	79	-	114	80	-	-	-	-	-	-	-
Stage 1	245	300	-	378	422	-	-	-	-	-	-	-
Stage 2	566	414	-	457	297	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.2	37.5	0.2	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	678	-	-	215	191	879	-	-
HCM Lane V/C Ratio	0.013	-	-	0.172	0.433	0.012	-	-
HCM Control Delay (s)	10.4	0.1	-	25.2	37.5	9.1	0.1	-
HCM Lane LOS	B	A	-	D	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	2	0	-	-

HCM 2010 TWSC
10: I-210 WB Off-Ramp & Central Ave

Future plus Project Conditions
AM Peak

Intersection	
Int Delay, s/veh	105.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		⬉		⬈		✥	
Traffic Vol, veh/h	4	347	0	0	529	8	388	0	375	0	0	7
Future Vol, veh/h	4	347	0	0	529	8	388	0	375	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	377	0	0	575	9	422	0	408	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	-	-	-	0	969	-	377	1169	965	580
Stage 1	-	-	-	-	-	-	385	-	-	580	580	-
Stage 2	-	-	-	-	-	-	584	-	-	589	385	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	991	-	0	0	-	-	~ 233	0	670	170	255	514
Stage 1	-	-	0	0	-	-	638	0	-	500	500	-
Stage 2	-	-	0	0	-	-	498	0	-	494	611	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	991	-	-	-	-	-	~ 229	-	670	66	254	514
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 229	-	-	66	254	-
Stage 1	-	-	-	-	-	-	635	-	-	498	500	-
Stage 2	-	-	-	-	-	-	491	-	-	192	608	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	228.3	12.1
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	229	670	991	-	-	-	514
HCM Lane V/C Ratio	1.842	0.608	0.004	-	-	-	0.015
HCM Control Delay (s)	$ 431.2	18.4	8.6	0	-	-	12.1
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	29.5	4.1	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	27

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	665	404	207	451	91	24
Future Vol, veh/h	665	404	207	451	91	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	723	439	225	490	99	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1162	0	1638	581
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	695	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	597	-	~ 91	457
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	456	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	597	-	~ 57	457
Mov Cap-2 Maneuver	-	-	-	-	~ 57	-
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	284	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	$ 406.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	57	457	-	-	597	-
HCM Lane V/C Ratio	1.735	0.057	-	-	0.377	-
HCM Control Delay (s)	$ 510.5	13.4	-	-	14.6	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	9.2	0.2	-	-	1.7	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	47	21	0	4	17	23	5	8	2	102	5	29
Future Vol, veh/h	47	21	0	4	17	23	5	8	2	102	5	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	23	0	4	18	25	5	9	2	111	5	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.3	7.4	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	69%	9%	75%
Vol Thru, %	53%	31%	39%	4%
Vol Right, %	13%	0%	52%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	68	44	136
LT Vol	5	47	4	102
Through Vol	8	21	17	5
RT Vol	2	0	23	29
Lane Flow Rate	16	74	48	148
Geometry Grp	1	1	1	1
Degree of Util (X)	0.02	0.092	0.054	0.172
Departure Headway (Hd)	4.352	4.496	4.092	4.18
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	826	802	880	849
Service Time	2.358	2.496	2.096	2.257
HCM Lane V/C Ratio	0.019	0.092	0.055	0.174
HCM Control Delay	7.4	8	7.3	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.2	0.6

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	23	2	52	0	2	13	7	531	3	93	837	32
Future Vol, veh/h	23	2	52	0	2	13	7	531	3	93	837	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	2	57	0	2	14	8	577	3	101	910	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1436	1726	473	1253	1742	290	945	0	0	580	0	0
Stage 1	1130	1130	-	595	595	-	-	-	-	-	-	-
Stage 2	306	596	-	658	1147	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	94	88	538	129	86	707	722	-	-	990	-	-
Stage 1	217	277	-	458	491	-	-	-	-	-	-	-
Stage 2	679	490	-	420	272	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	74	68	538	93	66	707	722	-	-	990	-	-
Mov Cap-2 Maneuver	74	68	-	93	66	-	-	-	-	-	-	-
Stage 1	214	217	-	451	483	-	-	-	-	-	-	-
Stage 2	652	482	-	292	213	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	42.7	17.3	0.2	1.6
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	722	-	-	176	308	990	-	-
HCM Lane V/C Ratio	0.011	-	-	0.476	0.053	0.102	-	-
HCM Control Delay (s)	10	0.1	-	42.7	17.3	9	0.8	-
HCM Lane LOS	B	A	-	E	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.3	0.2	0.3	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	2	11	57	19	3	25	3	1055	31	31	534	24
Future Vol, veh/h	2	11	57	19	3	25	3	1055	31	31	534	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	12	62	21	3	27	3	1147	34	34	580	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1242	1848	303	1534	1844	591	606	0	0	1181	0	0
Stage 1	661	661	-	1170	1170	-	-	-	-	-	-	-
Stage 2	581	1187	-	364	674	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	131	74	693	79	74	450	968	-	-	587	-	-
Stage 1	418	458	-	205	265	-	-	-	-	-	-	-
Stage 2	467	260	-	627	452	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	110	67	693	58	67	450	968	-	-	587	-	-
Mov Cap-2 Maneuver	110	67	-	58	67	-	-	-	-	-	-	-
Stage 1	414	418	-	203	263	-	-	-	-	-	-	-
Stage 2	429	258	-	506	412	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24	63.4	0	1.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	968	-	-	265	110	587	-	-
HCM Lane V/C Ratio	0.003	-	-	0.287	0.464	0.057	-	-
HCM Control Delay (s)	8.7	0	-	24	63.4	11.5	0.5	-
HCM Lane LOS	A	A	-	C	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1.2	2	0.2	-	-

Intersection	
Int Delay, s/veh	54.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		✥	
Traffic Vol, veh/h	6	427	0	0	527	10	258	0	217	3	0	24
Future Vol, veh/h	6	427	0	0	527	10	258	0	217	3	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	464	0	0	573	11	280	0	236	3	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	-	-	-	0	1070	-	464	1175	1057	579
Stage 1	-	-	-	-	-	-	478	-	-	579	579	-
Stage 2	-	-	-	-	-	-	592	-	-	596	478	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	991	-	0	0	-	-	~ 199	0	598	168	225	515
Stage 1	-	-	0	0	-	-	568	0	-	501	501	-
Stage 2	-	-	0	0	-	-	493	0	-	490	556	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	991	-	-	-	-	-	~ 187	-	598	101	223	515
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 187	-	-	101	223	-
Stage 1	-	-	-	-	-	-	562	-	-	496	501	-
Stage 2	-	-	-	-	-	-	468	-	-	294	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	168	16.1
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	187	598	991	-	-	-	354
HCM Lane V/C Ratio	1.5	0.394	0.007	-	-	-	0.083
HCM Control Delay (s)	296.8	14.9	8.7	0	-	-	16.1
HCM Lane LOS	F	B	A	A	-	-	C
HCM 95th %tile Q(veh)	17.6	1.9	0	-	-	-	0.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	113.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↱		↰	↑↑	↰	↱
Traffic Vol, veh/h	649	66	17	612	388	211
Future Vol, veh/h	649	66	17	612	388	211
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	705	72	18	665	422	229

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	777	0	1110	389
Stage 1	-	-	-	-	741	-
Stage 2	-	-	-	-	369	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	835	-	~ 203	610
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	670	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	835	-	~ 199	610
Mov Cap-2 Maneuver	-	-	-	-	~ 199	-
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 367.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	199	610	-	-	835	-
HCM Lane V/C Ratio	2.119	0.376	-	-	0.022	-
HCM Control Delay (s)	$ 559	14.4	-	-	9.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	32.7	1.7	-	-	0.1	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	33	25	1	0	27	34	1	9	3	70	14	36
Future Vol, veh/h	33	25	1	0	27	34	1	9	3	70	14	36
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	27	1	0	29	37	1	10	3	76	15	39
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	7.3	7.3	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	56%	0%	58%
Vol Thru, %	69%	42%	44%	12%
Vol Right, %	23%	2%	56%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	59	61	120
LT Vol	1	33	0	70
Through Vol	9	25	27	14
RT Vol	3	1	34	36
Lane Flow Rate	14	64	66	130
Geometry Grp	1	1	1	1
Degree of Util (X)	0.016	0.077	0.072	0.149
Departure Headway (Hd)	4.138	4.34	3.901	4.107
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	851	815	903	865
Service Time	2.233	2.423	1.99	2.173
HCM Lane V/C Ratio	0.016	0.079	0.073	0.15
HCM Control Delay	7.3	7.8	7.3	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.2	0.2	0.5

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑↱			↰↑↱			↰↑↑↱			↰↑↑↱	
Traffic Vol, veh/h	45	1	27	3	0	104	5	1112	5	13	435	17
Future Vol, veh/h	45	1	27	3	0	104	5	1112	5	13	435	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	1	29	3	0	113	5	1209	5	14	473	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1125	1734	246	1487	1741	607	491	0	0	1214	0	0
Stage 1	510	510	-	1222	1222	-	-	-	-	-	-	-
Stage 2	615	1224	-	265	519	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	160	87	754	86	86	439	1069	-	-	570	-	-
Stage 1	514	536	-	190	250	-	-	-	-	-	-	-
Stage 2	445	250	-	717	531	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	115	83	754	79	82	439	1069	-	-	570	-	-
Mov Cap-2 Maneuver	115	83	-	79	82	-	-	-	-	-	-	-
Stage 1	507	518	-	187	247	-	-	-	-	-	-	-
Stage 2	326	247	-	664	513	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45.1	18.2	0.1	0.5
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1069	-	-	166	389	570	-	-
HCM Lane V/C Ratio	0.005	-	-	0.478	0.299	0.025	-	-
HCM Control Delay (s)	8.4	0.1	-	45.1	18.2	11.5	0.2	-
HCM Lane LOS	A	A	-	E	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	2.3	1.2	0.1	-	-

APPENDIX E: SIGNAL WARRANT ANALYSIS

Major Street	Buena Vista Street	Project	Duarte Station Specific Plan
Minor Street	3 Ranch Road	Scenario	Existing
		Peak Hour	AM

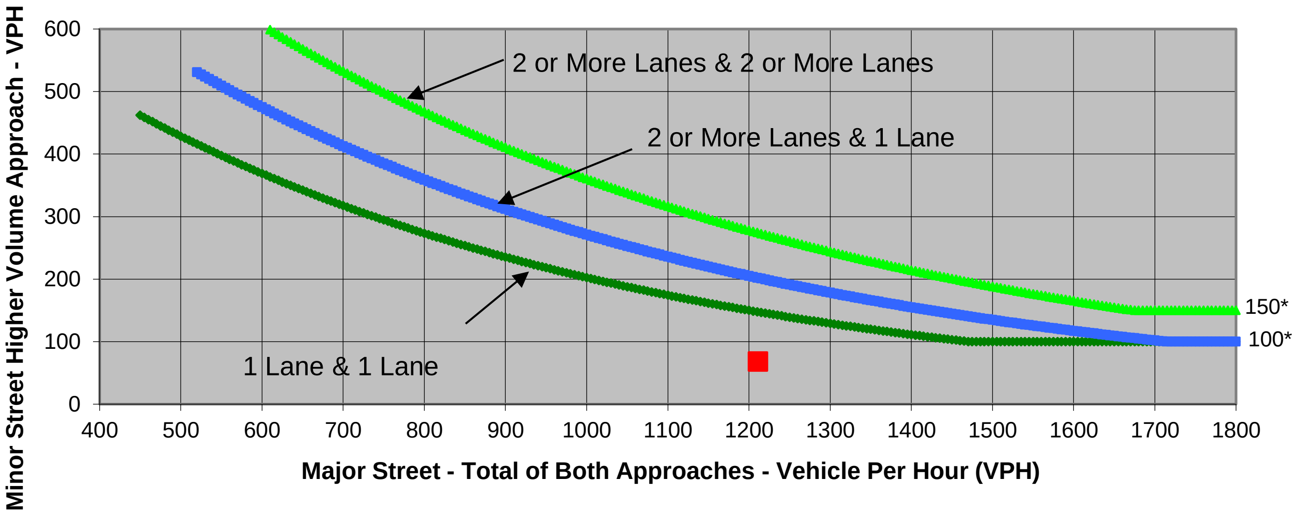
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	27
Through	500	647	3	2
Right	31	15	18	39
Total	539	672	26	68

Major Street Direction

x	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Buena Vista Street	**Minor Street** 3 Ranch Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,211**	**68**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

		Project	Duarte Station Specific Plan
Major Street	Buena Vista Street	Scenario	Existing
Minor Street	3 Ranch Road	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	27
Through	500	647	3	2
Right	31	15	18	39
Total	539	672	26	68

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	18.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	26

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing	**0.1**	**68**	**1,305**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

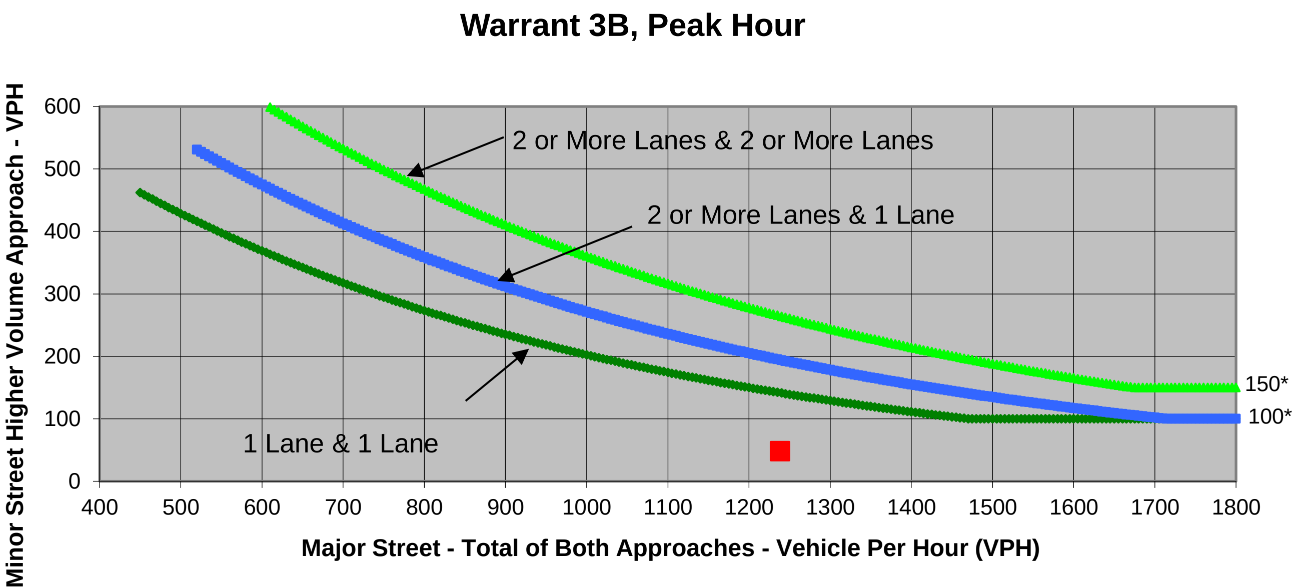
		Project	Duarte Station Specific Plan
Major Street	Buena Vista Street	Scenario	Existing
Minor Street	3 Ranch Road	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	30	2	16
Through	737	418	8	1
Right	27	23	38	24
Total	767	471	48	41

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	**Minor Street**	**Warrant Met**
	Buena Vista Street	3 Ranch Road	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,238**	**48**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Project Duarte Station Specific Plan
Major Street Buena Vista Street
Scenario Existing
Minor Street 3 Ranch Road
Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	30	2	16
Through	737	418	8	1
Right	27	23	38	24
Total	767	471	48	41

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	22.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	48

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing	**0.3**	**48**	**1,327**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

			Project	Duarte Station Specific Plan
Major Street	Central Ave		Scenario	Existing
Minor Street	I-210 WB Off-ramp		Peak Hour	AM

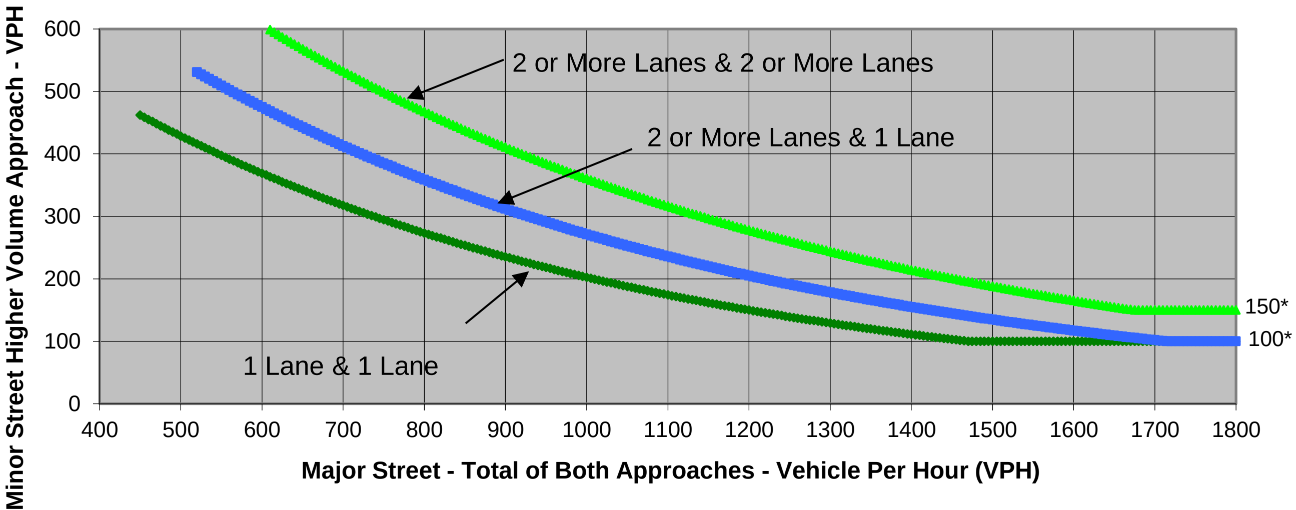
Turn Movement Volumes

	NB	SB	EB	WB
Left	298	0	4	0
Through	0	0	334	472
Right	334	7	0	8
Total	632	7	338	480

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Central Ave	**Minor Street** I-210 WB Off-ramp	**Warrant Met**
Number of Approach Lanes	**2**	**2**	**<u>YES</u>**
Traffic Volume (VPH) *	**818**	**632**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Project: Duarte Station Specific Plan
Scenario: Existing
Peak Hour: AM

Major Street: Central Ave
Minor Street: I-210 WB Off-ramp

Turn Movement Volumes

	NB	SB	EB	WB
Left	298	0	4	0
Through	0	0	334	472
Right	334	7	0	8
Total	632	7	338	480

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	94.4
Approach with Worst Case Delay	EB
Total Vehicles on Approach	338

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing	**8.9**	**632**	**1,457**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

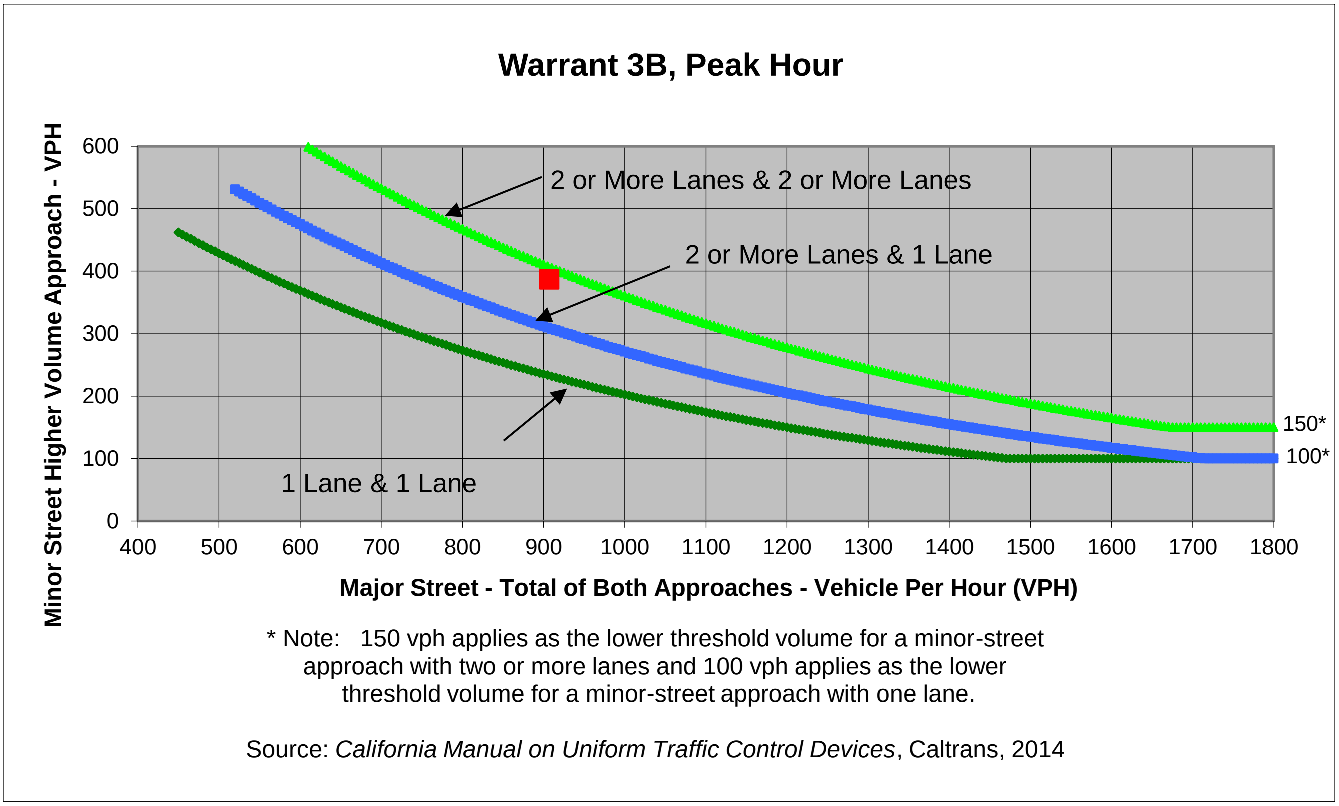
Major Street	Central Ave		Project	Duarte Station Specific Plan
Minor Street	I-210 WB Off-ramp		Scenario	Existing
			Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	222	3	6	0
Through	0	0	408	483
Right	165	23	0	10
Total	387	26	414	493

Major Street Direction

	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Central Ave	**Minor Street** I-210 WB Off-ramp	**Warrant Met**
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**907**	**387**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	Duarte Station Specific Plan
Major Street	Central Ave	Scenario	Existing
Minor Street	I-210 WB Off-ramp	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	222	3	6	0
Through	0	0	408	483
Right	165	23	0	10
Total	387	26	414	493

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	94.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	414

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing	**10.9**	**387**	**1,320**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Project: Duarte Station Specific Plan
Scenario: Existing
Peak Hour: AM

Major Street: Duarte Road
Minor Street: Village Road

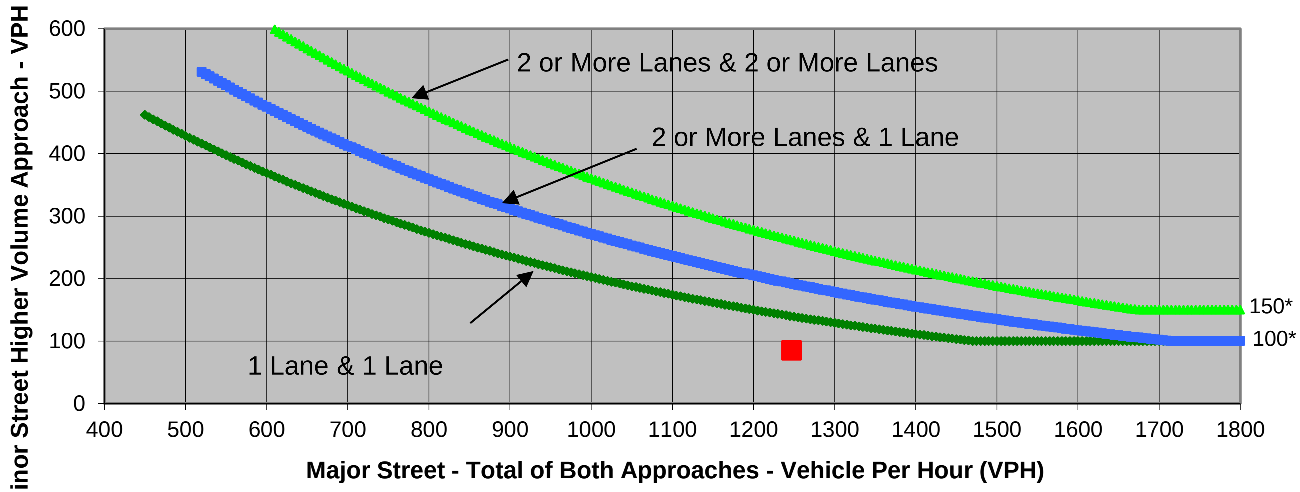
Turn Movement Volumes

	NB	SB	EB	WB
Left	66	0	0	166
Through	0	0	502	317
Right	19	0	262	0
Total	85	0	764	483

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duarte Road	**Minor Street** Village Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,247**	**85**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Duarte Road		Project	Duarte Station Specific Plan
Minor Street	Village Road		Scenario	Existing
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	66	0	0	166
Through	0	0	502	317
Right	19	0	262	0
Total	85	0	764	483

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	49.1
Approach with Worst Case Delay	EB
Total Vehicles on Approach	764

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing	**10.4**	**85**	**1,332**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

Project	Duarte Station Specific Plan
Scenario	Existing
Peak Hour	PM

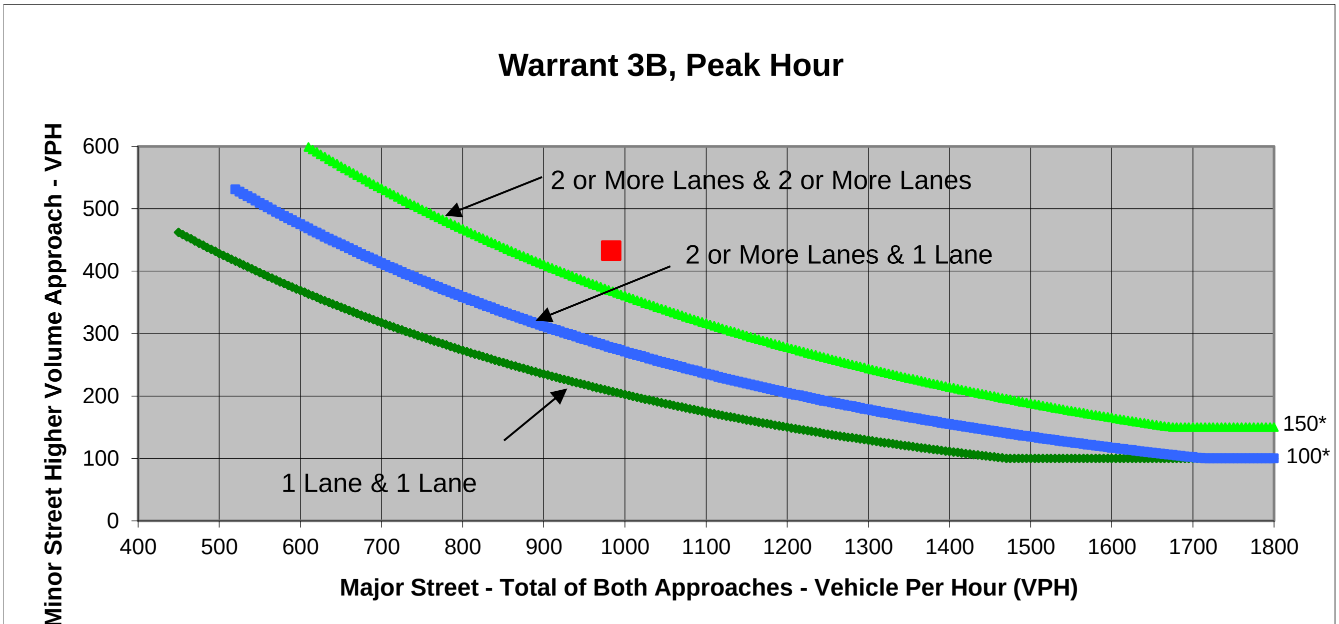
Major Street	Duarte Road
Minor Street	Village Road

Turn Movement Volumes

	NB	SB	EB	WB
Left	252	0	0	11
Through	0	0	509	420
Right	181	0	43	0
Total	433	0	552	431

Major Street Direction

	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duarte Road	**Minor Street** Village Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**983**	**433**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

		Project	Duarte Station Specific Plan
Major Street	Duarte Road	Scenario	Existing
Minor Street	Village Road	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	252	0	0	11
Through	0	0	509	420
Right	181	0	43	0
Total	433	0	552	431

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	44.3
Approach with Worst Case Delay	EB
Total Vehicles on Approach	552

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing	**6.8**	**433**	**1,416**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

		Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue	Scenario	Existing
Minor Street	Evergreen Street	Peak Hour	AM

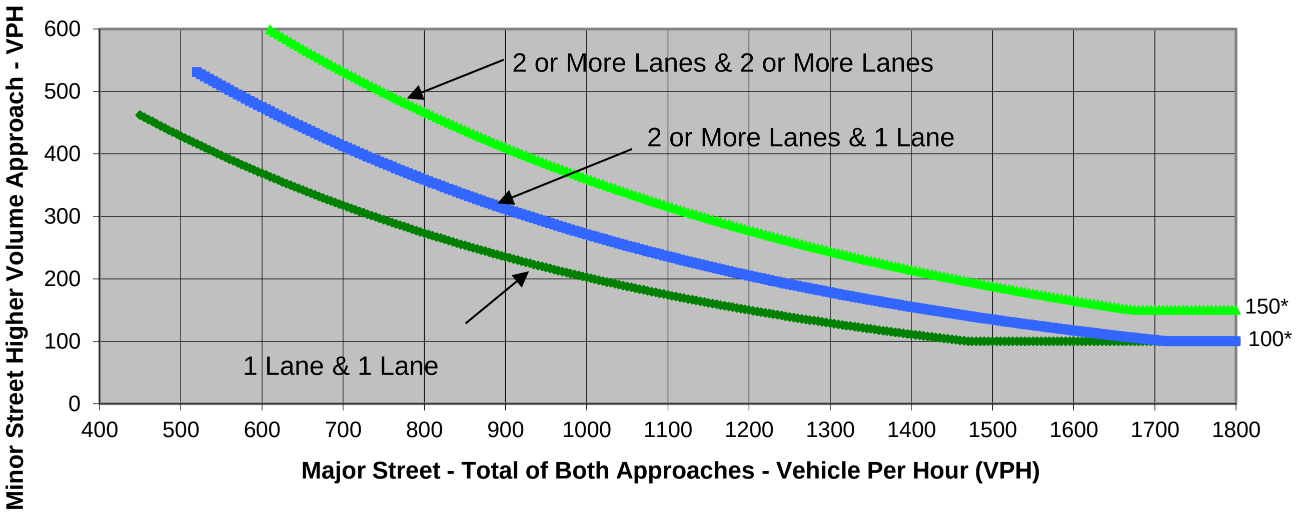
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	91	46	4
Through	8	5	18	11
Right	2	28	0	16
Total	15	124	64	31

Major Street Direction

X	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	**Minor Street**	**Warrant Met**
	Duncannan Avenue	Evergreen Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**95**	**124**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue	Scenario	Existing
Minor Street	Evergreen Street	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	91	46	4
Through	8	5	18	11
Right	2	28	0	16
Total	15	124	64	31

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.8
Approach with Worst Case Delay	EB
Total Vehicles on Approach	64

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing	**0.1**	**64**	**234**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

Project	Duarte Station Specific Plan
Scenario	Existing
Peak Hour	PM

Major Street	Duncannan Avenue
Minor Street	Evergreen Street

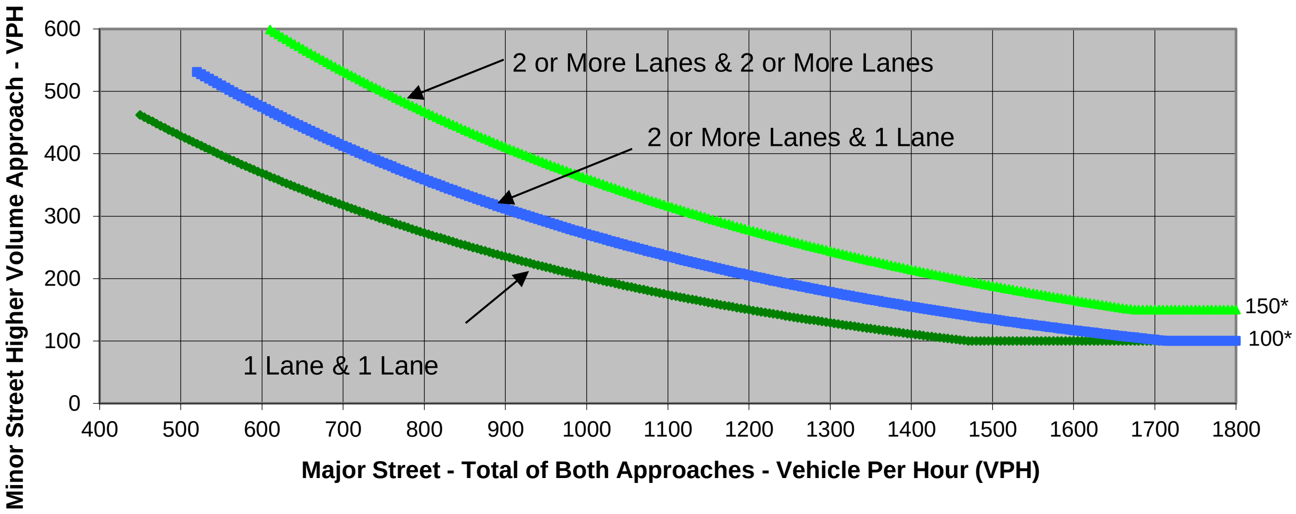
Turn Movement Volumes

	NB	SB	EB	WB
Left	1	45	32	0
Through	9	14	18	22
Right	3	35	1	29
Total	13	94	51	51

Major Street Direction

X	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duncannan Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**102**	**94**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

			Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue		Scenario	Existing
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	45	32	0
Through	9	14	18	22
Right	3	35	1	29
Total	13	94	51	51

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	51

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing	**0.1**	**51**	**209**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

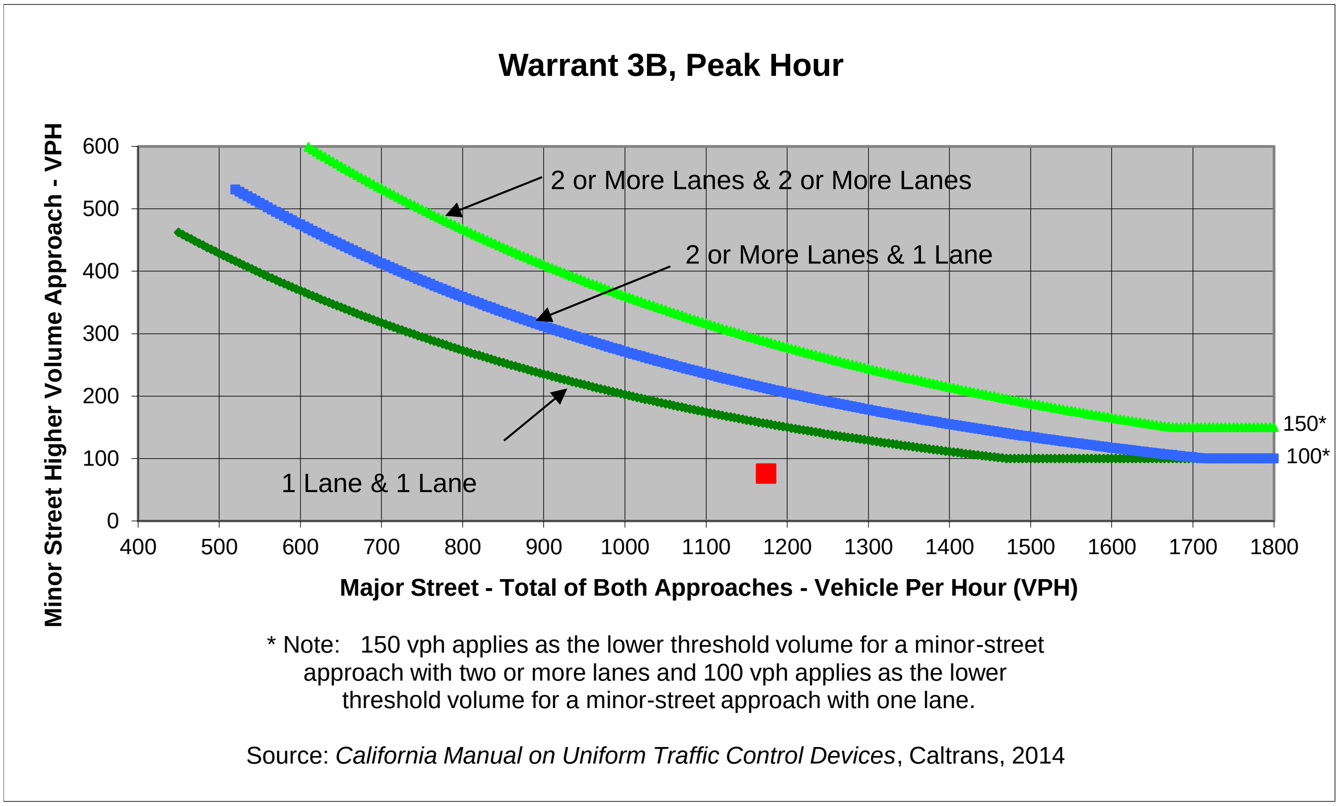
			Project	Duarte Station Specific Plan
Major Street	Highland Avenue		Scenario	Existing
Minor Street	Evergreen Street		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	90	23	0
Through	348	700	2	2
Right	3	28	51	13
Total	356	818	76	15

Major Street Direction

X	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,174**	**76**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project: Duarte Station Specific Plan
Scenario: Existing
Peak Hour: AM

Major Street: Highland Avenue
Minor Street: Evergreen Street

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	90	23	0
Through	348	700	2	2
Right	3	28	51	13
Total	356	818	76	15

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	24.3
Approach with Worst Case Delay	EB
Total Vehicles on Approach	76

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing	**0.5**	**76**	**1,265**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

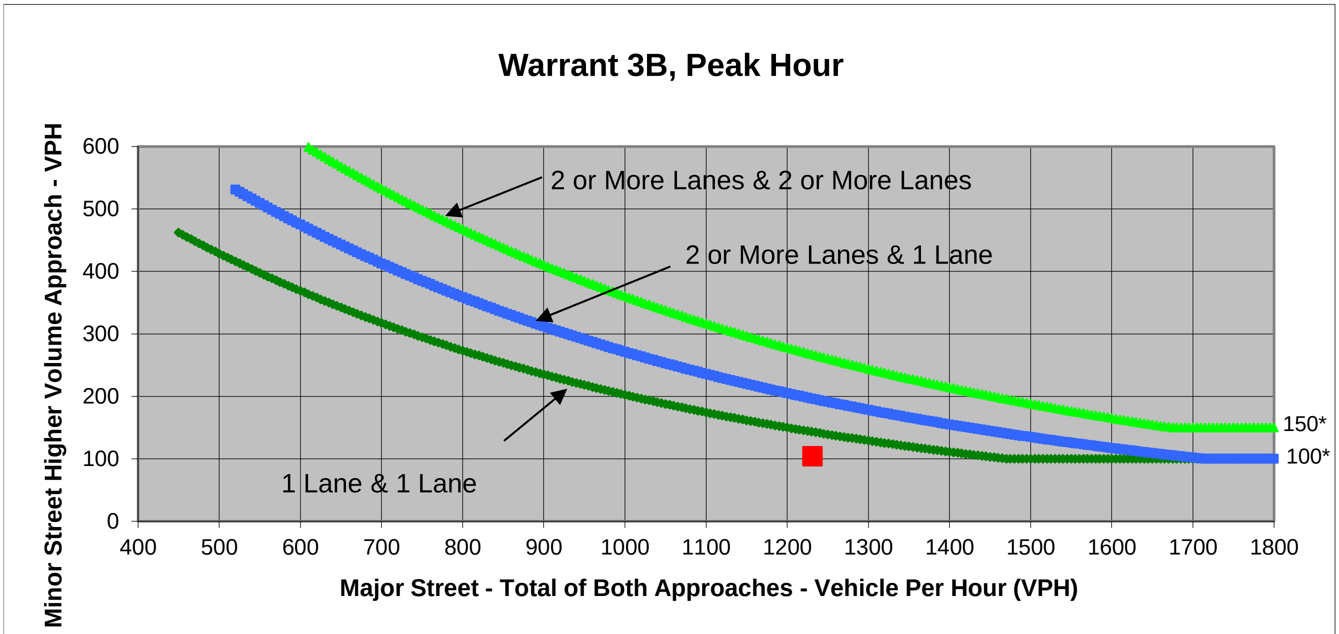
			Project	Duarte Station Specific Plan
Major Street	Highland Avenue		Scenario	Existing
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	35	3
Through	935	256	1	0
Right	5	17	20	101
Total	945	286	56	104

Major Street Direction

X	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,231**	**104**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Project: Duarte Station Specific Plan
Scenario: Existing
Peak Hour: PM

Major Street: Highland Avenue
Minor Street: Evergreen Street

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	35	3
Through	935	256	1	0
Right	5	17	20	101
Total	945	286	56	104

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	22.0
Approach with Worst Case Delay	EB
Total Vehicles on Approach	56

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing	**0.3**	**104**	**1,391**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

			Project	Duarte Station Specific Plan
Major Street	Buena Vista Street		Scenario	Existing plus Project
Minor Street	3 Ranch Road		Peak Hour	AM

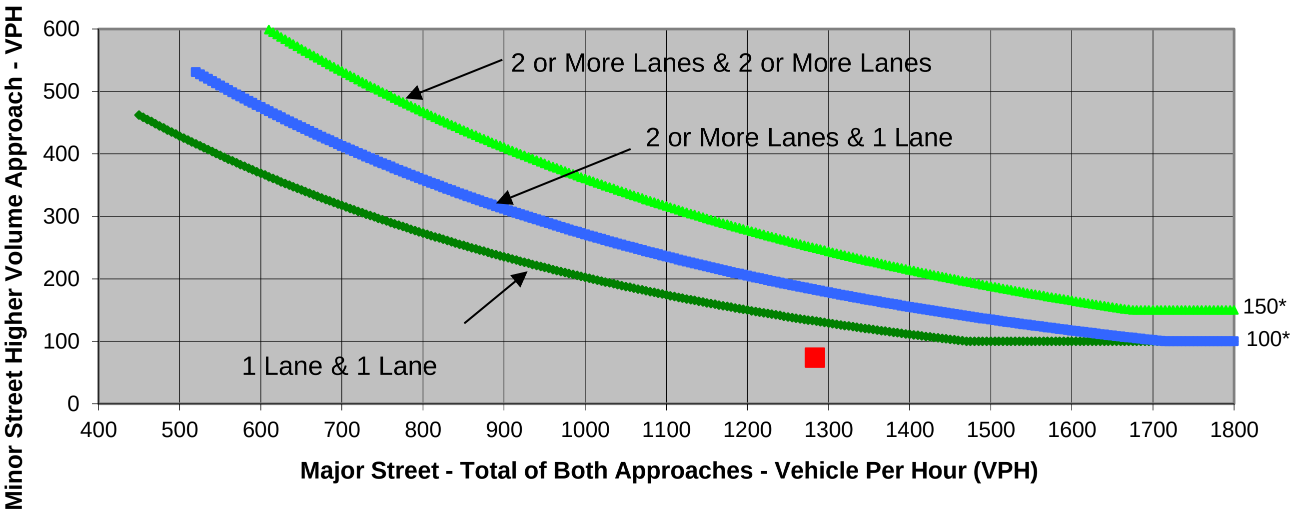
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	30
Through	559	659	4	5
Right	32	15	24	39
Total	599	684	33	74

Major Street Direction

x	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Buena Vista Street	**Minor Street** 3 Ranch Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,283**	**74**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Buena Vista Street		Project	Duarte Station Specific Plan
			Scenario	Existing plus Project
Minor Street	3 Ranch Road		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	30
Through	559	659	4	5
Right	32	15	24	39
Total	599	684	33	74

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	23.4
Approach with Worst Case Delay	EB
Total Vehicles on Approach	33

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing plus Project	**0.2**	**74**	**1,390**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

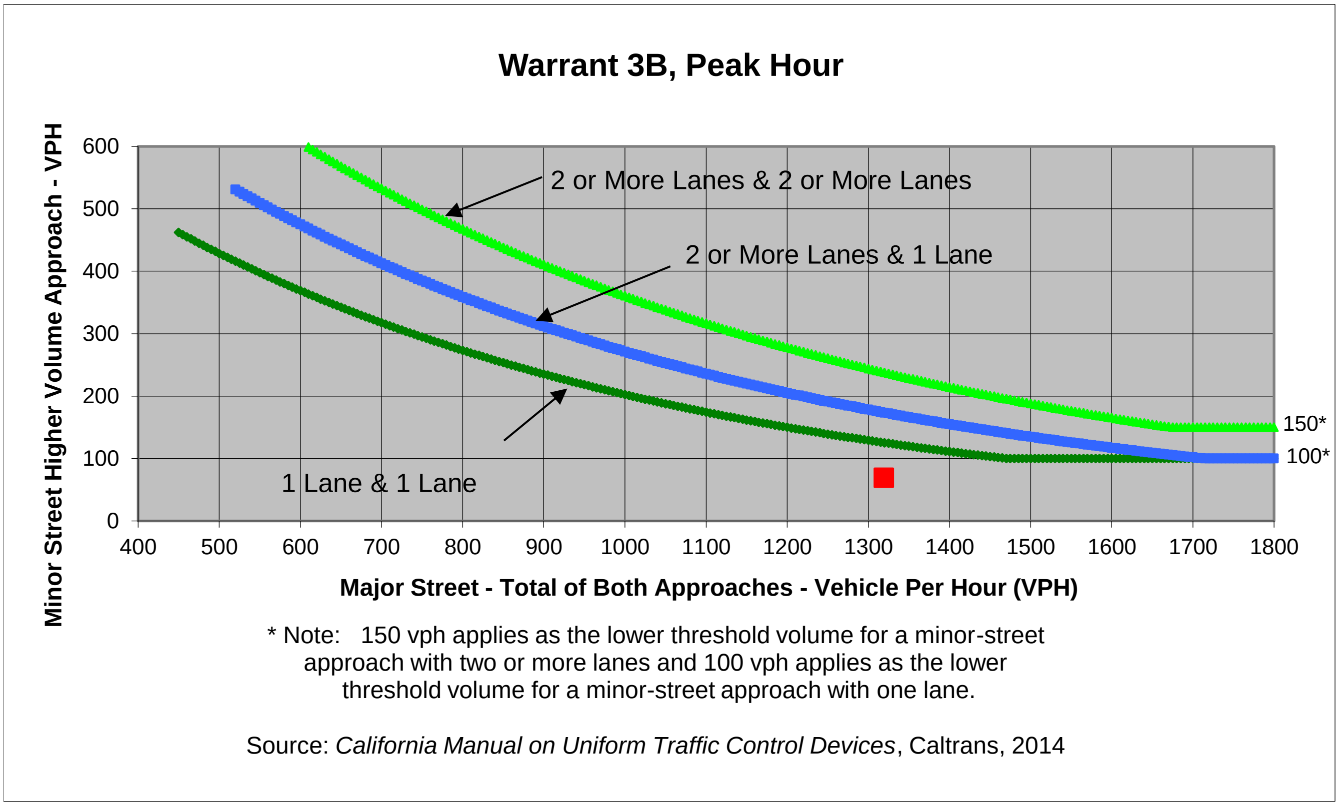
			Project	Duarte Station Specific Plan
Major Street	Buena Vista Street		Scenario	Existing plus Project
Minor Street	3 Ranch Road		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	30	2	18
Through	777	456	11	3
Right	30	23	56	24
Total	810	509	69	45

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Buena Vista Street	**Minor Street** 3 Ranch Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,319**	**69**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project: Duarte Station Specific Plan
Scenario: Existing plus Project
Peak Hour: PM

Major Street: Buena Vista Street
Minor Street: 3 Ranch Road

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	30	2	18
Through	777	456	11	3
Right	30	23	56	24
Total	810	509	69	45

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	28.4
Approach with Worst Case Delay	EB
Total Vehicles on Approach	69

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing plus Project	**0.5**	**69**	**1,433**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

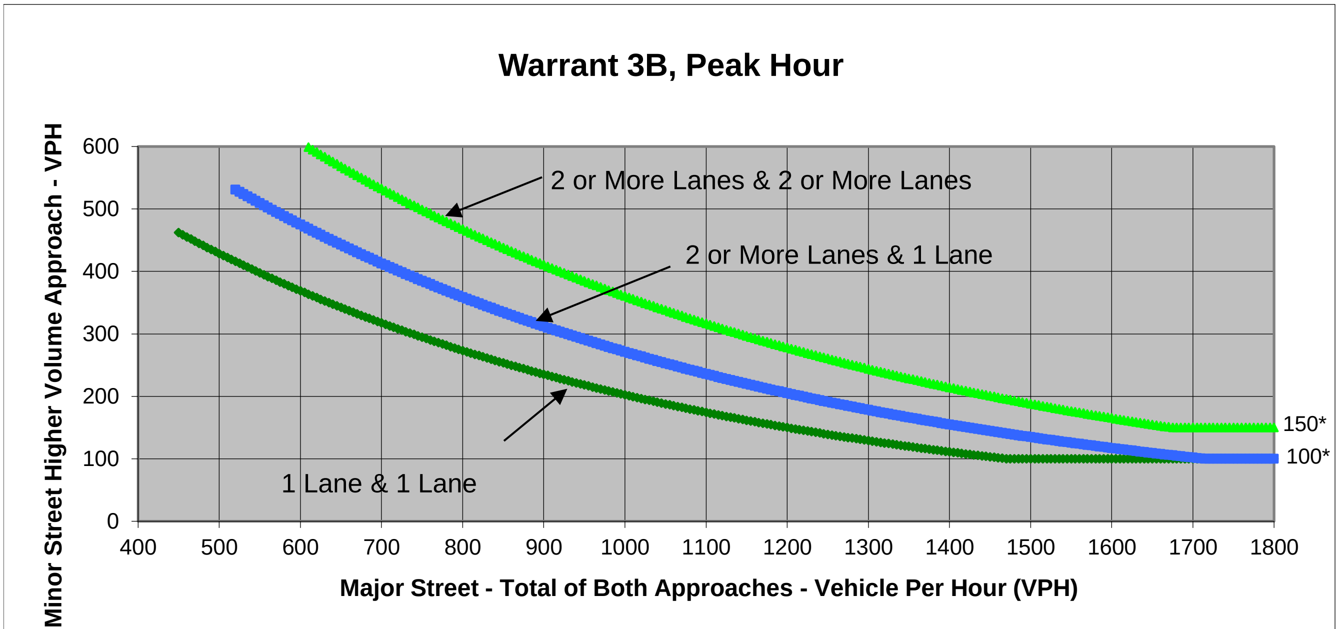
		Project	Duarte Station Specific Plan
Major Street	Central Ave	Scenario	Existing plus Project
Minor Street	I-210 WB Off-ramp	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	298	0	4	0
Through	0	0	336	514
Right	348	7	0	8
Total	646	7	340	522

Major Street Direction

	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Central Ave	**Minor Street** I-210 WB Off-ramp	**Warrant Met**
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**862**	**646**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Project	Duarte Station Specific Plan
Scenario	Existing plus Project
Peak Hour	AM

Major Street	Central Ave
Minor Street	I-210 WB Off-ramp

Turn Movement Volumes

	NB	SB	EB	WB
Left	298	0	4	0
Through	0	0	336	514
Right	348	7	0	8
Total	646	7	340	522

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	112.7
Approach with Worst Case Delay	EB
Total Vehicles on Approach	340

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing plus Project	**10.6**	**646**	**1,515**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

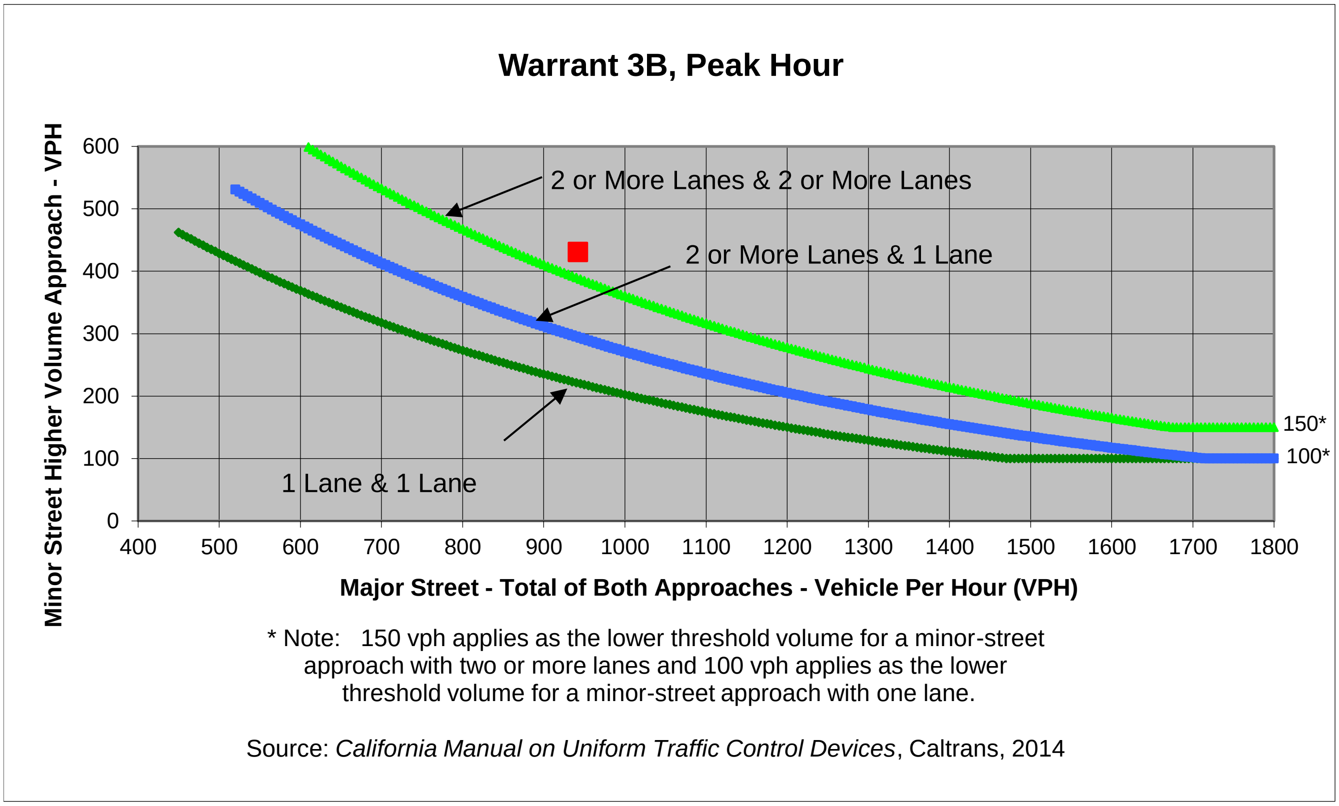
			Project	Duarte Station Specific Plan
Major Street	Central Ave		Scenario	Existing plus Project
Minor Street	I-210 WB Off-ramp		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	222	3	6	0
Through	0	0	414	512
Right	209	23	0	10
Total	431	26	420	522

Major Street Direction

	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Central Ave	**Minor Street** I-210 WB Off-ramp	**Warrant Met**
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**942**	**431**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

		Project	Duarte Station Specific Plan
Major Street	Central Ave	Scenario	Existing plus Project
Minor Street	I-210 WB Off-ramp	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	222	3	6	0
Through	0	0	414	512
Right	209	23	0	10
Total	431	26	420	522

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	101.6
Approach with Worst Case Delay	EB
Total Vehicles on Approach	420

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing plus Project	**11.9**	**431**	**1,399**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

		Project	Duarte Station Specific Plan
Major Street	Duarte Road	Scenario	Existing plus Project
Minor Street	Village Road	Peak Hour	AM

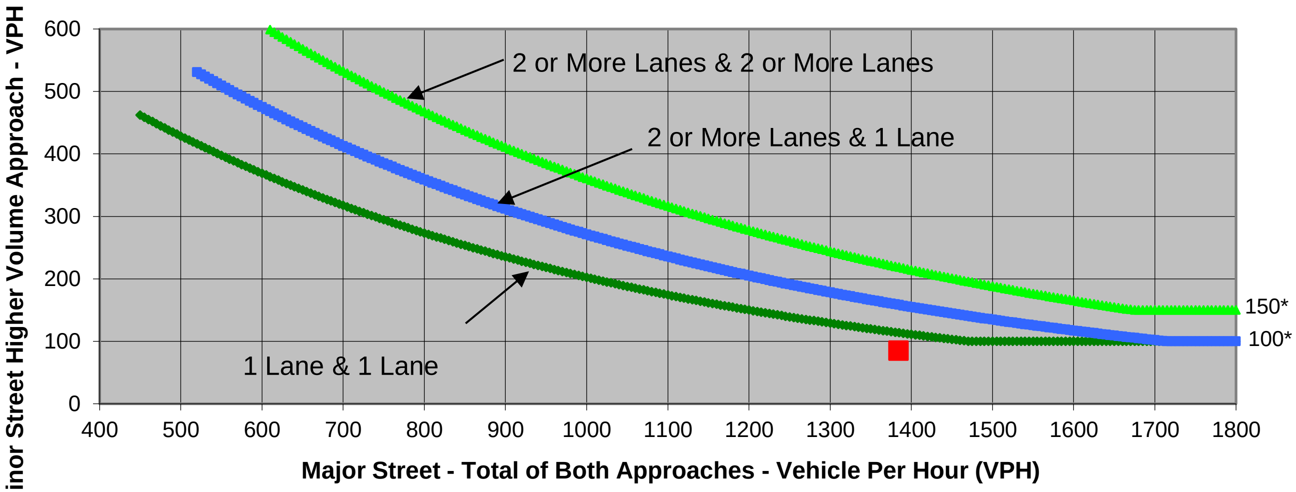
Turn Movement Volumes

	NB	SB	EB	WB
Left	66	0	0	166
Through	0	0	535	421
Right	19	0	262	0
Total	85	0	797	587

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duarte Road	**Minor Street** Village Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,384**	**85**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Major Street	Duarte Road	Project	Duarte Station Specific Plan
Minor Street	Village Road	Scenario	Existing plus Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	66	0	0	166
Through	0	0	535	421
Right	19	0	262	0
Total	85	0	797	587

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	63.2
Approach with Worst Case Delay	EB
Total Vehicles on Approach	797

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing plus Project	**14**	**85**	**1,469**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

			Project	Duarte Station Specific Plan
Major Street	Duarte Road		Scenario	Existing plus Project
Minor Street	Village Road		Peak Hour	PM

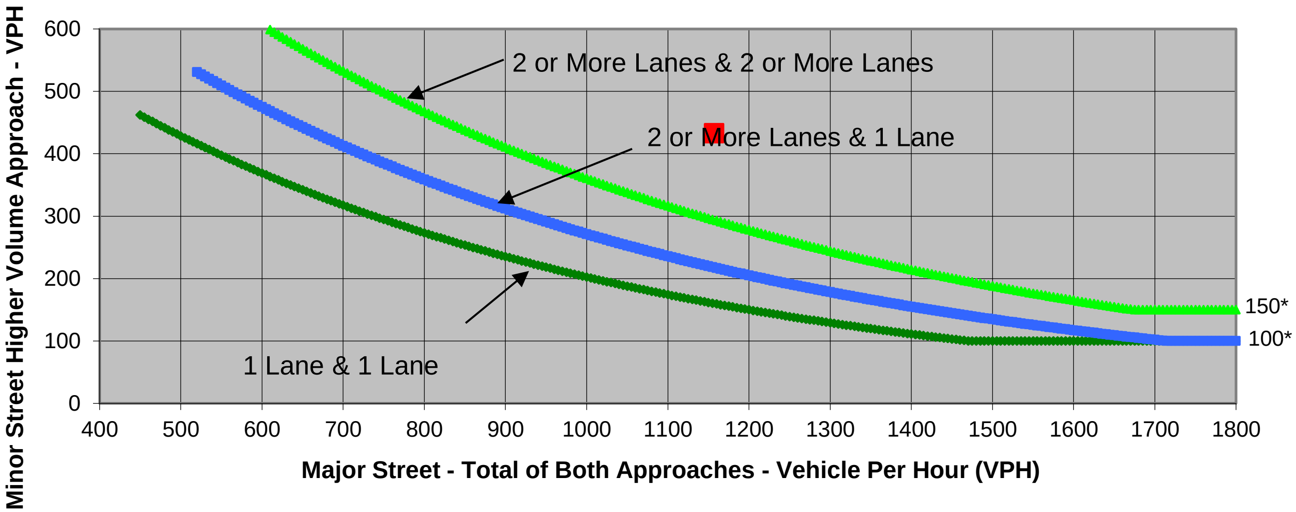
Turn Movement Volumes

	NB	SB	EB	WB
Left	252	0	0	11
Through	0	0	613	490
Right	181	0	43	0
Total	433	0	656	501

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duarte Road	**Minor Street** Village Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,157**	**433**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Duarte Road		Project	Duarte Station Specific Plan
Minor Street	Village Road		Scenario	Existing plus Project
			Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	252	0	0	11
Through	0	0	613	490
Right	181	0	43	0
Total	433	0	656	501

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	85.8
Approach with Worst Case Delay	EB
Total Vehicles on Approach	656

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing plus Project	**15.6**	**433**	**1,590**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Major Street: Duncannan Avenue
Minor Street: Evergreen Street

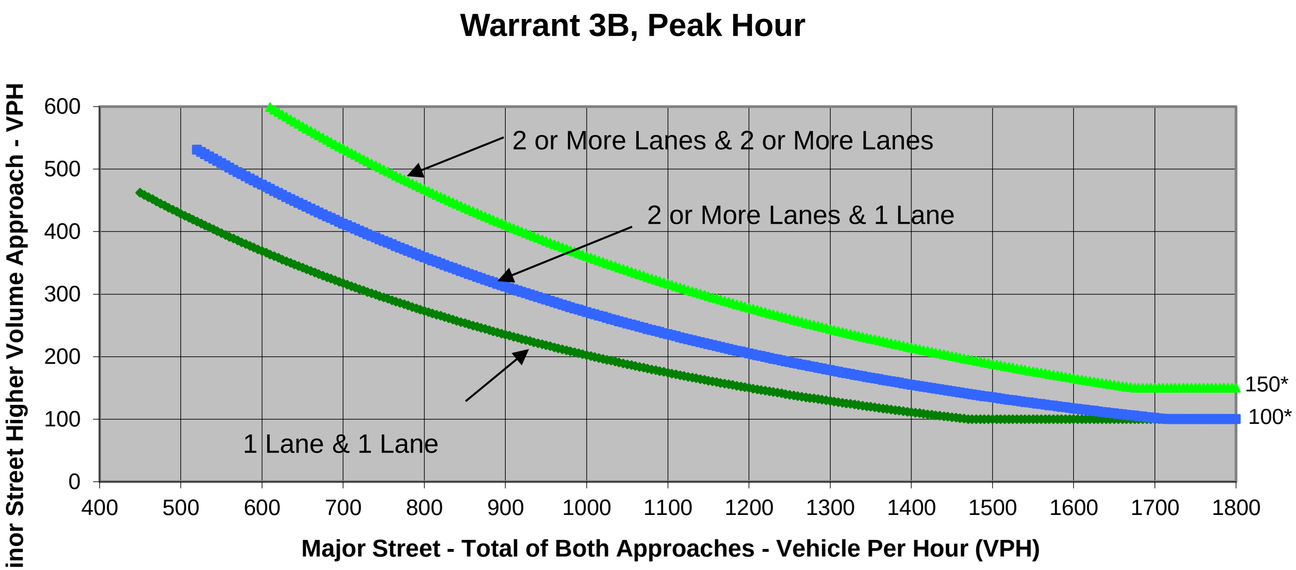
Project: Duarte Station Specific Plan
Scenario: Existing plus Project
Peak Hour: AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	99	46	4
Through	8	5	20	17
Right	2	28	0	22
Total	15	132	66	43

Major Street Direction

X	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duncannan Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**109**	**132**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Duncannan Avenue	Project	Duarte Station Specific Plan
Minor Street	Evergreen Street	Scenario	Existing plus Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	99	46	4
Through	8	5	20	17
Right	2	28	0	22
Total	15	132	66	43

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	66

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing plus Project	**0.1**	**66**	**256**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR & PEERS

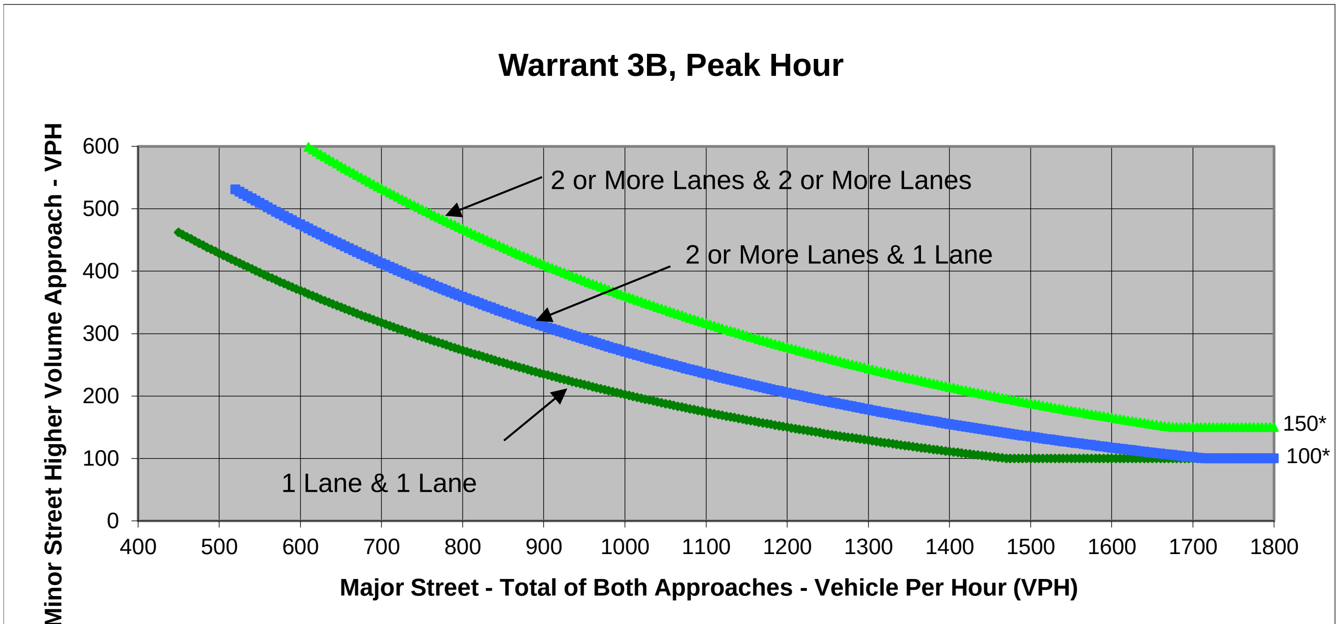
			Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue		Scenario	Existing plus Project
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	69	32	0
Through	9	14	24	26
Right	3	35	1	33
Total	13	118	57	59

Major Street Direction

X	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duncannan Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**116**	**118**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

			Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue		Scenario	Existing plus Project
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	69	32	0
Through	9	14	24	26
Right	3	35	1	33
Total	13	118	57	59

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.7
Approach with Worst Case Delay	EB
Total Vehicles on Approach	57

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing plus Project	**0.1**	**59**	**247**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR & PEERS

		Project	Duarte Station Specific Plan
Major Street	Highland Avenue	Scenario	Existing plus Project
Minor Street	Evergreen Street	Peak Hour	AM

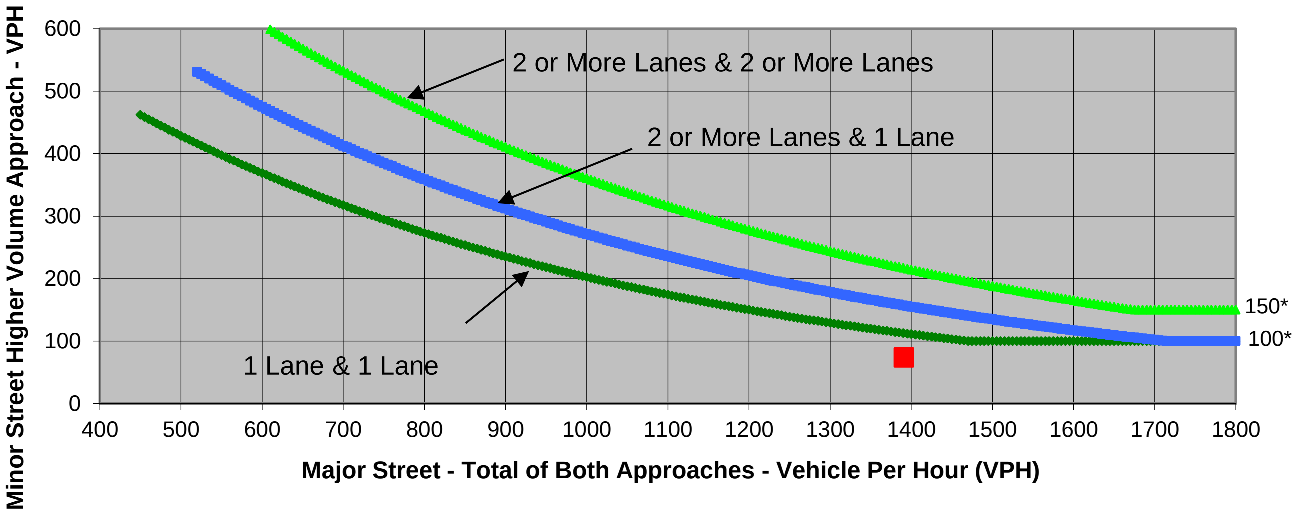
Turn Movement Volumes

	NB	SB	EB	WB
Left	7	90	22	0
Through	512	748	2	2
Right	3	31	50	13
Total	522	869	74	15

Major Street Direction

X	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	Minor Street Evergreen Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,391**	**74**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Highland Avenue		Project	Duarte Station Specific Plan
Minor Street	Evergreen Street		Scenario	Existing plus Project
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	7	90	22	0
Through	512	748	2	2
Right	3	31	50	13
Total	522	869	74	15

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	31.8
Approach with Worst Case Delay	EB
Total Vehicles on Approach	74

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Existing plus Project	**0.7**	**74**	**1,480**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

			Project	Duarte Station Specific Plan
Major Street	Highland Avenue		Scenario	Existing plus Project
Minor Street	Evergreen Street		Peak Hour	PM

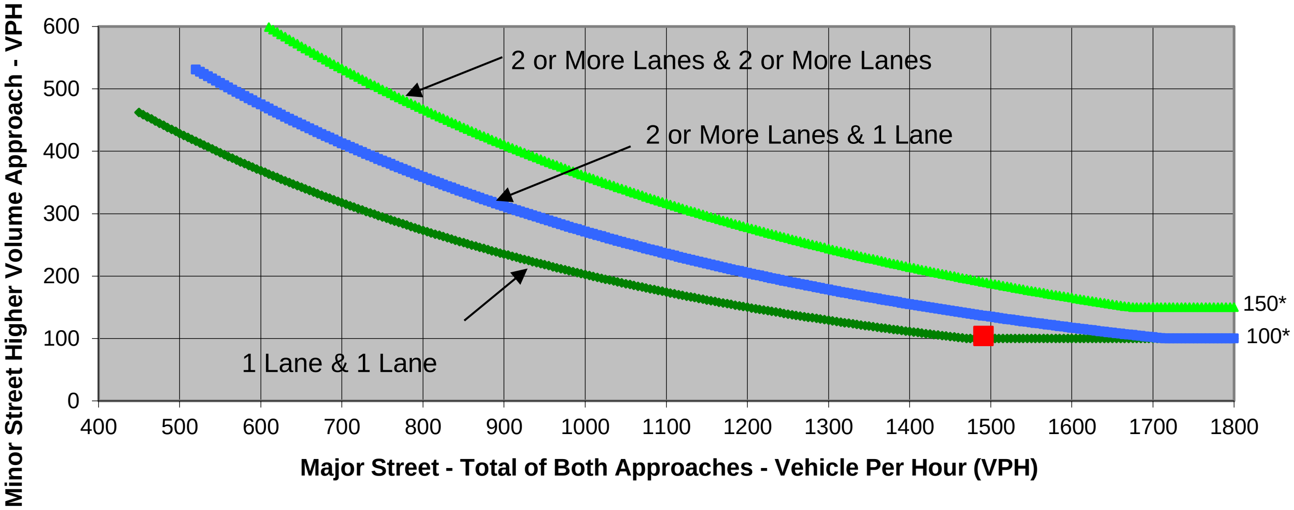
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	44	3
Through	1,036	416	1	0
Right	5	16	26	101
Total	1,046	445	71	104

Major Street Direction

X	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,491**	**104**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

			Project	Duarte Station Specific Plan
Major Street	Highland Avenue		Scenario	Existing plus Project
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	44	3
Through	1,036	416	1	0
Right	5	16	26	101
Total	1,046	445	71	104

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	36.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	71

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Existing plus Project	**0.7**	**104**	**1,666**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

			Project	Duarte Station Specific Plan
Major Street	Buena Vista Street		Scenario	Future Base
Minor Street	3 Ranch Road		Peak Hour	AM

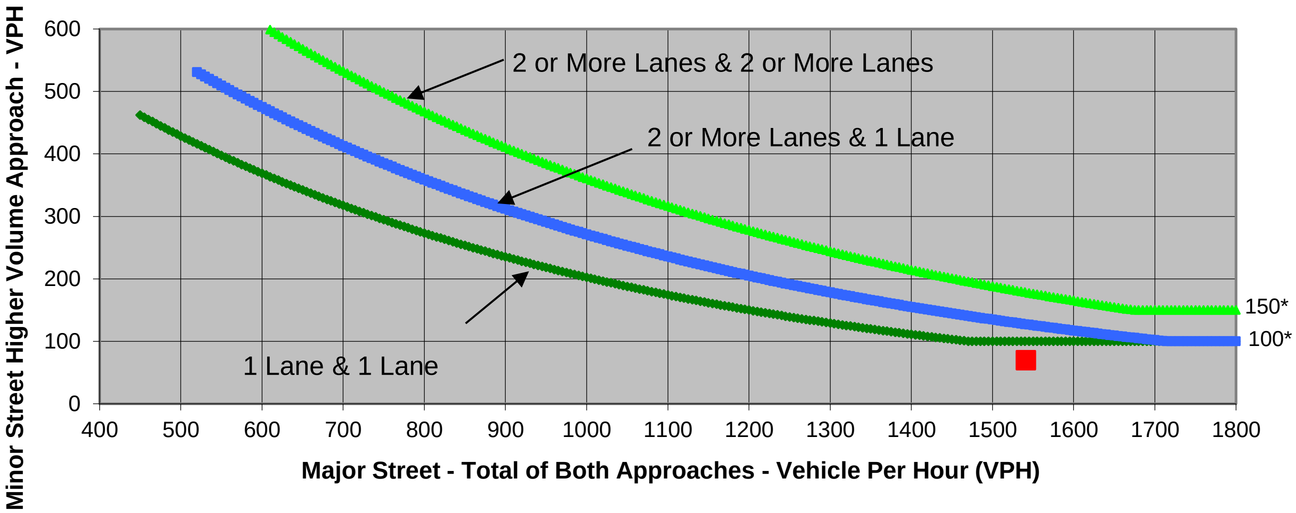
Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	28
Through	568	908	3	2
Right	32	15	19	40
Total	608	933	27	70

Major Street Direction

x	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Buena Vista Street	**Minor Street** 3 Ranch Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,541**	**70**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	Duarte Station Specific Plan
Major Street	Buena Vista Street	Scenario	Future Base
Minor Street	3 Ranch Road	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	28
Through	568	908	3	2
Right	32	15	19	40
Total	608	933	27	70

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	26.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	27

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future Base	**0.2**	**70**	**1,638**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

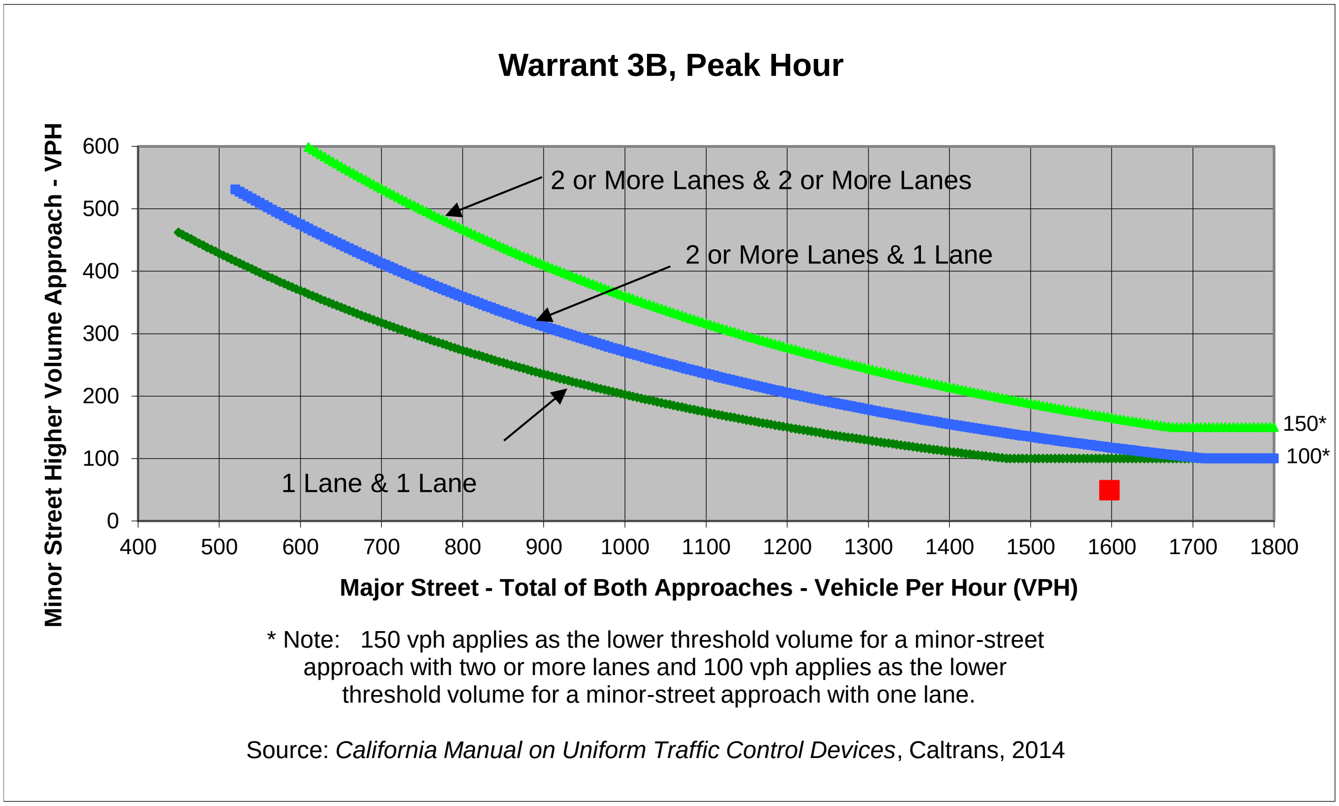
Major Street	Buena Vista Street	Project	Duarte Station Specific Plan
Minor Street	3 Ranch Road	Scenario	Future Base
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	31	2	17
Through	1,015	496	8	1
Right	28	24	39	25
Total	1,046	551	49	43

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Buena Vista Street	Minor Street 3 Ranch Road	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,597**	**49**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project: Duarte Station Specific Plan
Major Street: Buena Vista Street
Scenario: Future Base
Minor Street: 3 Ranch Road
Peak Hour: PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	31	2	17
Through	1,015	496	8	1
Right	28	24	39	25
Total	1,046	551	49	43

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	42.7
Approach with Worst Case Delay	EB
Total Vehicles on Approach	49

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future Base	**0.6**	**49**	**1,689**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

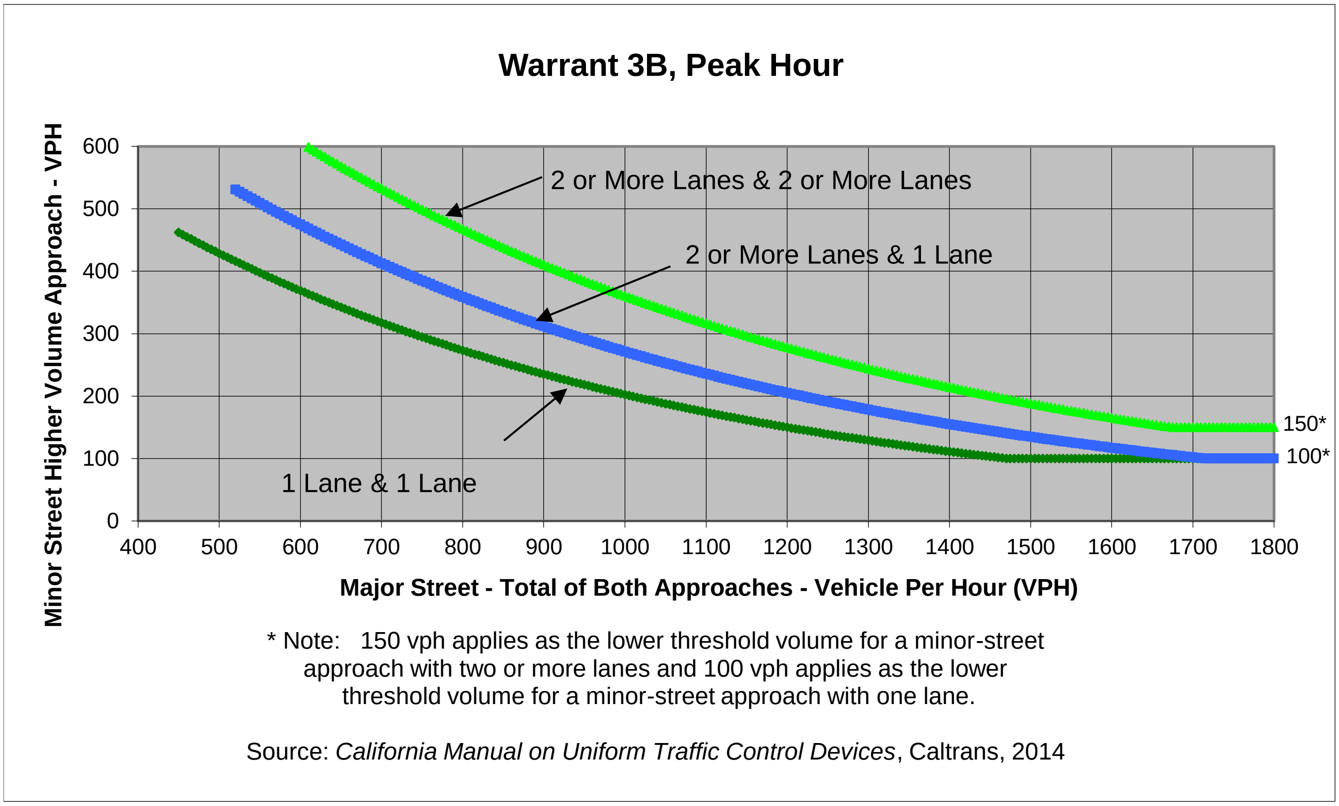
			Project	Duarte Station Specific Plan
Major Street	Central Ave		Scenario	Future Base
Minor Street	I-210 WB Off-ramp		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	4	0
Through	0	0	345	487
Right	361	7	0	8
Total	749	7	349	495

Major Street Direction

	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	**Minor Street**	**Warrant Met**
	Central Ave	I-210 WB Off-ramp	
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**844**	**749**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Central Ave		Project	Duarte Station Specific Plan
Minor Street	I-210 WB Off-ramp		Scenario	Future Base
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	4	0
Through	0	0	345	487
Right	361	7	0	8
Total	749	7	349	495

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	201.8
Approach with Worst Case Delay	EB
Total Vehicles on Approach	349

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future Base	**19.6**	**749**	**1,600**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

		Project	Duarte Station Specific Plan
Major Street	Central Ave	Scenario	Future Base
Minor Street	I-210 WB Off-ramp	Peak Hour	PM

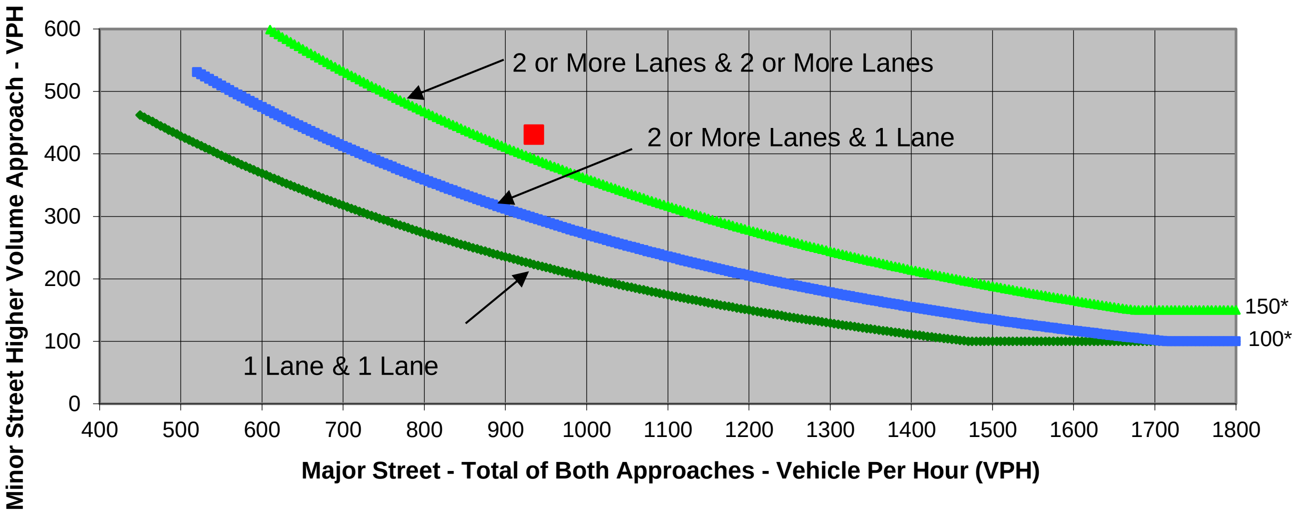
Turn Movement Volumes

	NB	SB	EB	WB
Left	258	3	6	0
Through	0	0	421	498
Right	173	24	0	10
Total	431	27	427	508

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Central Ave	**Minor Street** I-210 WB Off-ramp	**Warrant Met**
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**935**	**431**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	Duarte Station Specific Plan
Major Street	Central Ave	Scenario	Future Base
Minor Street	I-210 WB Off-ramp	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	258	3	6	0
Through	0	0	421	498
Right	173	24	0	10
Total	431	27	427	508

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	159.0
Approach with Worst Case Delay	EB
Total Vehicles on Approach	427

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future Base	**18.9**	**431**	**1,393**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

		Project	Duarte Station Specific Plan
Major Street	Duarte Road	Scenario	Future Base
Minor Street	Village Road	Peak Hour	AM

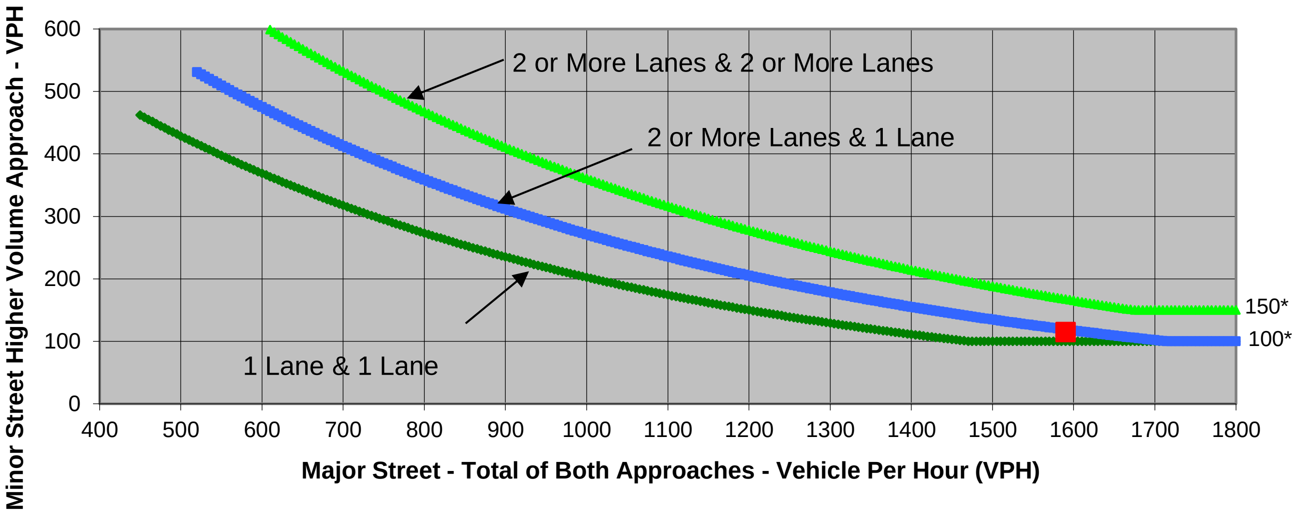
Turn Movement Volumes

	NB	SB	EB	WB
Left	91	0	0	207
Through	0	0	632	347
Right	24	0	404	0
Total	115	0	1,036	554

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	**Minor Street**	**Warrant Met**
	Duarte Road	Village Road	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,590**	**115**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

		Project	Duarte Station Specific Plan
Major Street	Duarte Road	Scenario	Future Base
Minor Street	Village Road	Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	91	0	0	207
Through	0	0	632	347
Right	24	0	404	0
Total	115	0	1,036	554

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	305.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	1,036

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future Base	**88**	**115**	**1,705**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

Project	Duarte Station Specific Plan
Scenario	Future Base
Peak Hour	PM

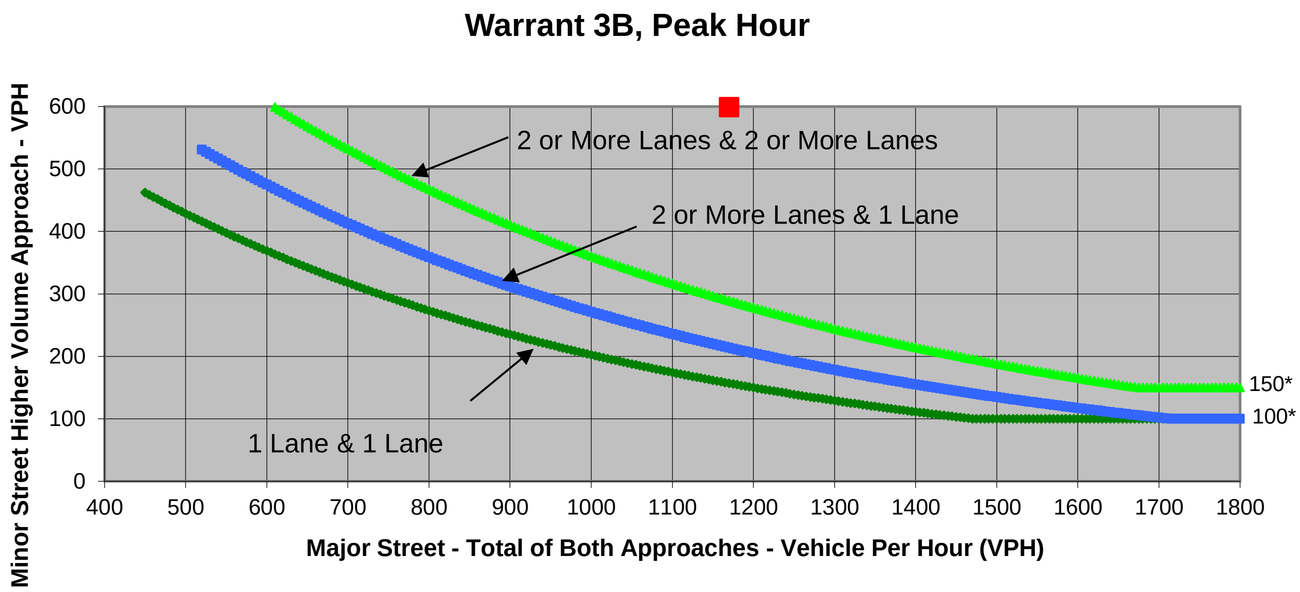
Major Street	Duarte Road
Minor Street	Village Road

Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	0	17
Through	0	0	545	542
Right	211	0	66	0
Total	599	0	611	559

Major Street Direction

	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	**Minor Street**	**Warrant Met**
	Duarte Road	Village Road	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,170**	**599**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	Duarte Station Specific Plan
Scenario	Future Base
Peak Hour	PM

Major Street	Duarte Road
Minor Street	Village Road

Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	0	17
Through	0	0	545	542
Right	211	0	66	0
Total	599	0	611	559

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	238.3
Approach with Worst Case Delay	EB
Total Vehicles on Approach	611

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Future Base	**40.4**	**599**	**1,769**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

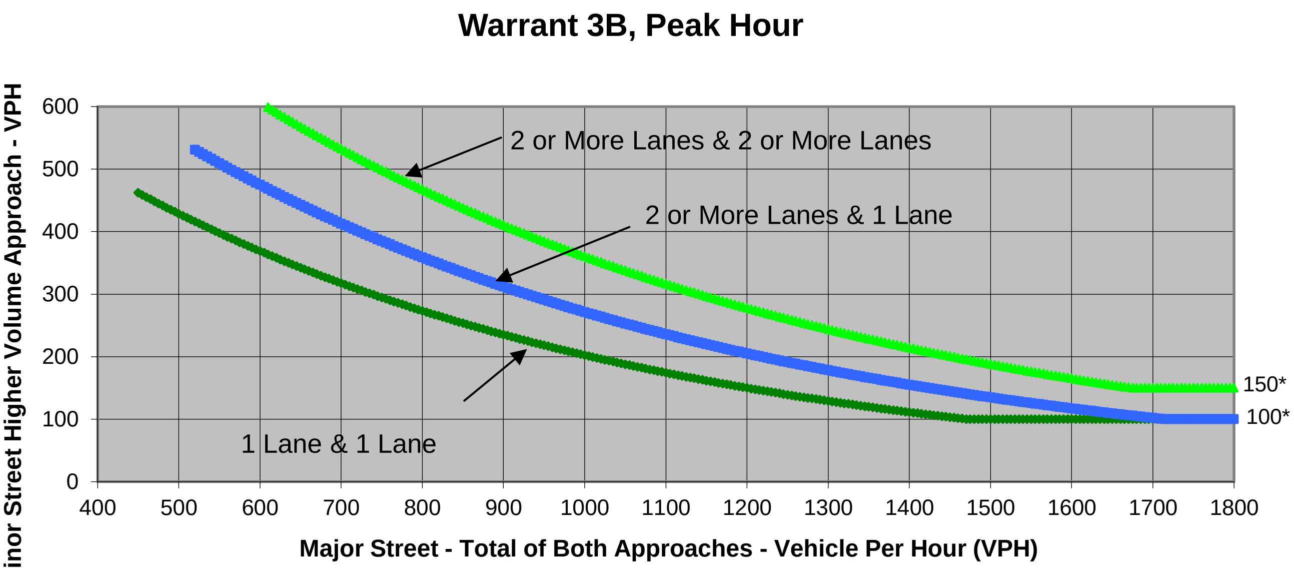
Major Street	Duncannan Avenue		Project	Duarte Station Specific Plan
Minor Street	Evergreen Street		Scenario	Future Base
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	94	47	4
Through	8	5	19	11
Right	2	29	0	17
Total	15	128	66	32

Major Street Direction

X	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duncannan Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**98**	**128**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Project	Duarte Station Specific Plan
Scenario	Future Base
Peak Hour	AM

Major Street	Duncannan Avenue
Minor Street	Evergreen Street

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	94	47	4
Through	8	5	19	11
Right	2	29	0	17
Total	15	128	66	32

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.8
Approach with Worst Case Delay	EB
Total Vehicles on Approach	66

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Future Base	**0.1**	**66**	**241**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

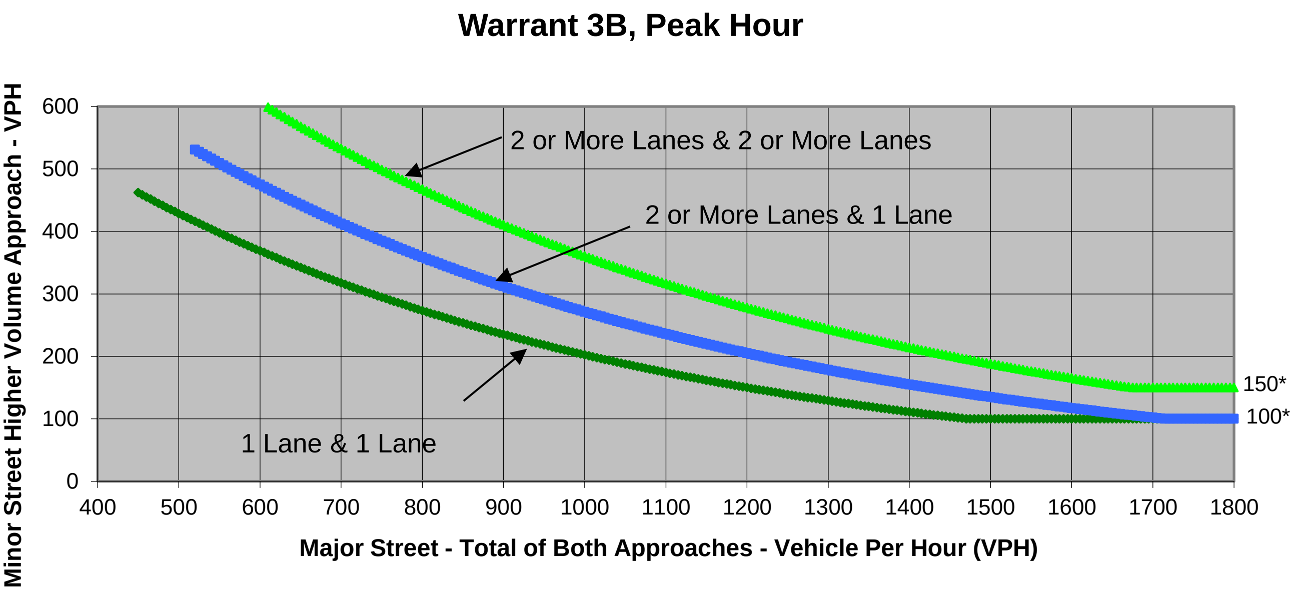
			Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue		Scenario	Future Base
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	46	33	0
Through	9	14	19	23
Right	3	36	1	30
Total	13	96	53	53

Major Street Direction

X	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duncannan Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**106**	**96**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

		Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue	Scenario	Future Base
Minor Street	Evergreen Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	46	33	0
Through	9	14	19	23
Right	3	36	1	30
Total	13	96	53	53

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	53

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Future Base	**0.1**	**53**	**215**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

Project	Duarte Station Specific Plan
Scenario	Future Base
Peak Hour	AM

Major Street	Highland Avenue
Minor Street	Evergreen Street

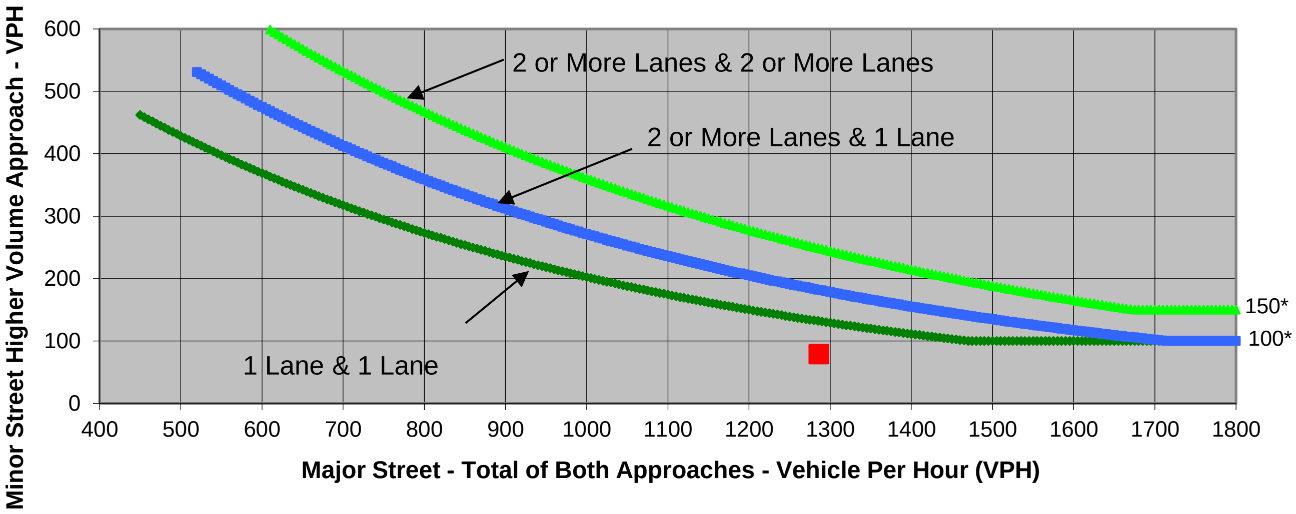
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	93	24	0
Through	367	789	2	2
Right	3	29	53	13
Total	375	911	79	15

Major Street Direction

X	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,286**	**79**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Highland Avenue		Project	Duarte Station Specific Plan
Minor Street	Evergreen Street		Scenario	Future Base
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	93	24	0
Through	367	789	2	2
Right	3	29	53	13
Total	375	911	79	15

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	30.7
Approach with Worst Case Delay	EB
Total Vehicles on Approach	79

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future Base	**0.7**	**79**	**1,380**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

			Project	Duarte Station Specific Plan
Major Street	Highland Avenue		Scenario	Future Base
Minor Street	Evergreen Street		Peak Hour	PM

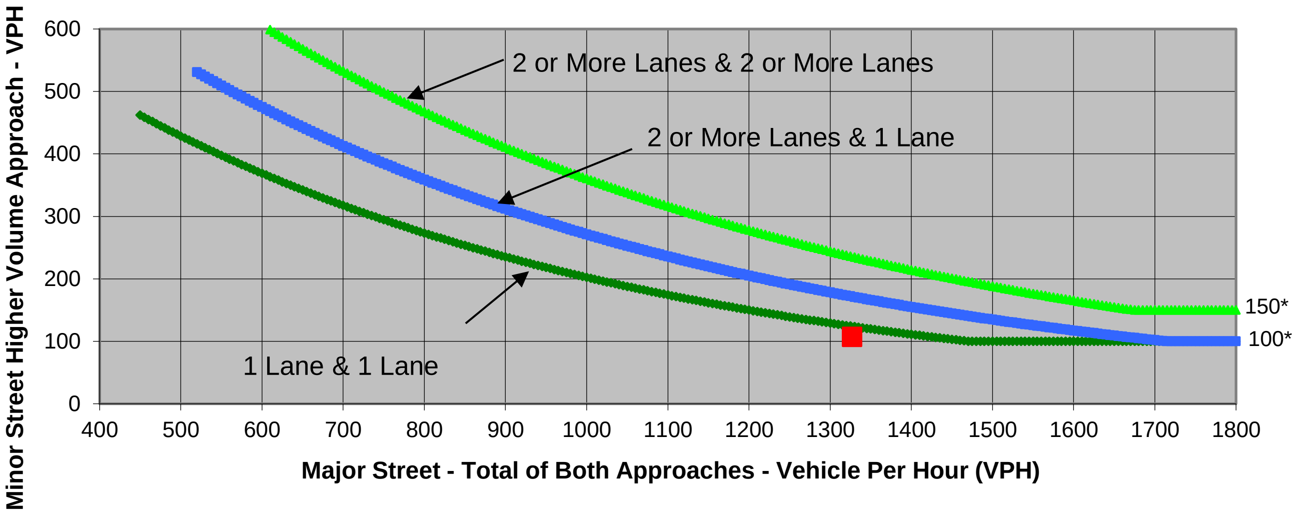
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	36	3
Through	1,011	275	1	0
Right	5	18	21	104
Total	1,021	306	58	107

Major Street Direction

X	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	Minor Street Evergreen Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,327**	**107**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Project	Duarte Station Specific Plan
Scenario	Future Base
Peak Hour	PM

Major Street	Highland Avenue
Minor Street	Evergreen Street

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	36	3
Through	1,011	275	1	0
Right	5	18	21	104
Total	1,021	306	58	107

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	25.0
Approach with Worst Case Delay	EB
Total Vehicles on Approach	58

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Future Base	**0.4**	**107**	**1,492**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

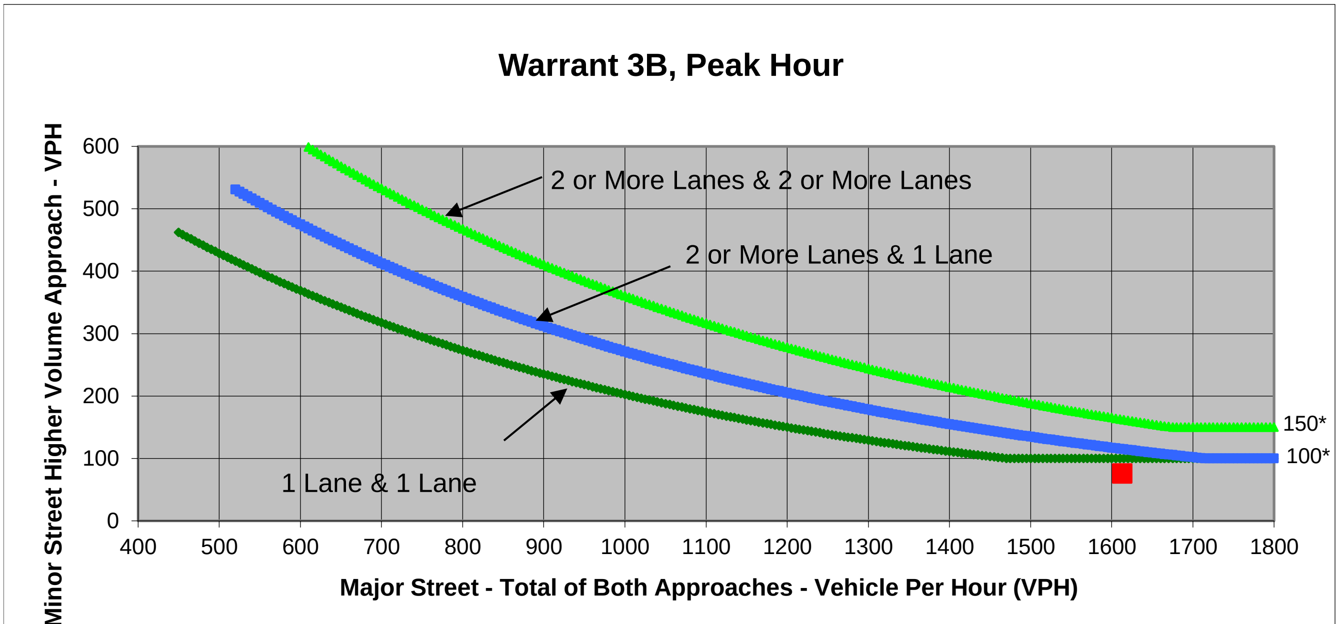
			Project	Duarte Station Specific Plan
Major Street	Buena Vista Street		Scenario	Future plus Project
Minor Street	3 Ranch Road		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	31
Through	627	920	4	5
Right	33	15	25	40
Total	668	945	34	76

Major Street Direction

x	North/South
	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Buena Vista Street	**Minor Street** 3 Ranch Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,613**	**76**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Project	Duarte Station Specific Plan
Scenario	Future plus Project
Peak Hour	AM

Major Street	Buena Vista Street
Minor Street	3 Ranch Road

Turn Movement Volumes

	NB	SB	EB	WB
Left	8	10	5	31
Through	627	920	4	5
Right	33	15	25	40
Total	668	945	34	76

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	37.5
Approach with Worst Case Delay	EB
Total Vehicles on Approach	34

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**0.4**	**76**	**1,723**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR & PEERS

			Project	Duarte Station Specific Plan
Major Street	Buena Vista Street		Scenario	Future plus Project
Minor Street	3 Ranch Road		Peak Hour	PM

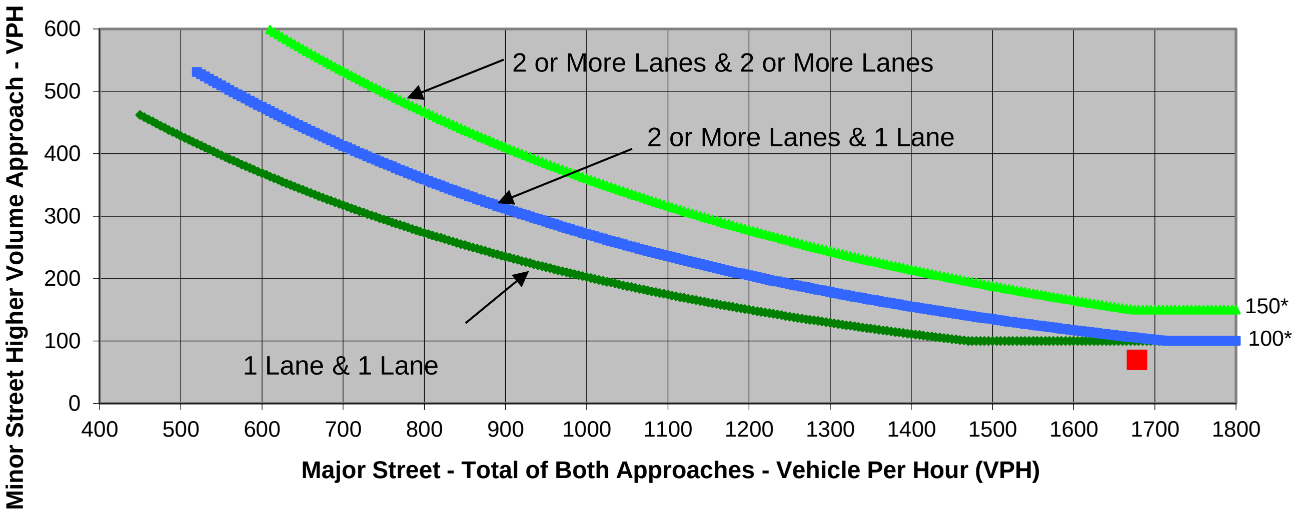
Turn Movement Volumes

	NB	SB	EB	WB
Left	3	31	2	19
Through	1,055	534	11	3
Right	31	24	57	25
Total	1,089	589	70	47

Major Street Direction

x	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Buena Vista Street	**Minor Street** 3 Ranch Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,678**	**70**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Buena Vista Street	Project	Duarte Station Specific Plan
Minor Street	3 Ranch Road	Scenario	Future plus Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	3	31	2	19
Through	1,055	534	11	3
Right	31	24	57	25
Total	1,089	589	70	47

Major Street Direction

x	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	63.4
Approach with Worst Case Delay	EB
Total Vehicles on Approach	70

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Future plus Project	**1.2**	**70**	**1,795**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

Major Street	Central Ave	Project	Duarte Station Specific Plan
Minor Street	I-210 WB Off-ramp	Scenario	Future plus Project
		Peak Hour	AM

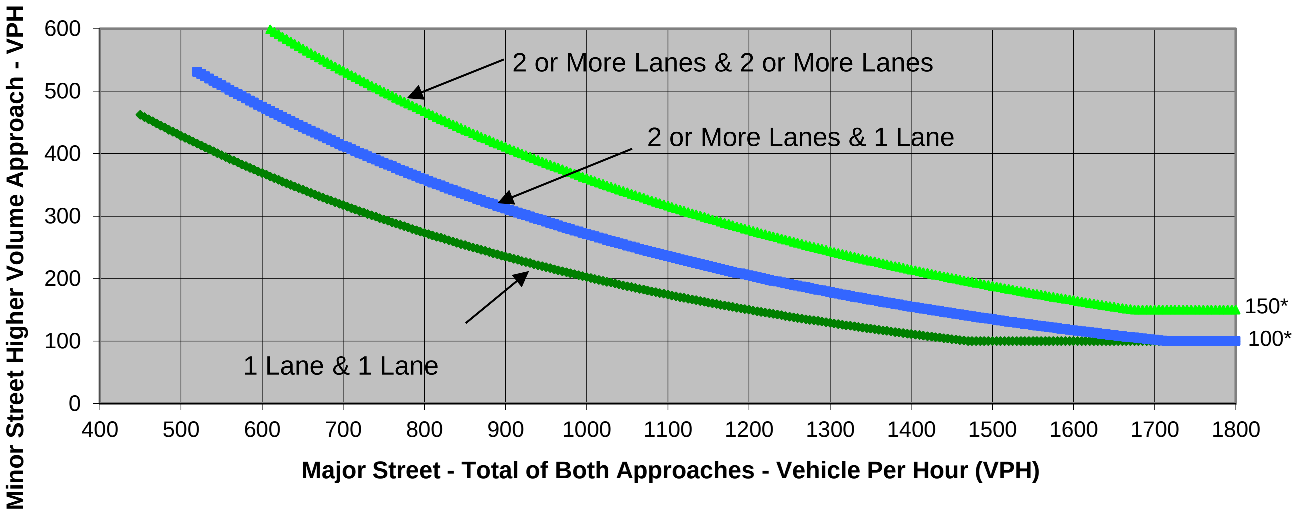
Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	4	0
Through	0	0	347	529
Right	375	7	0	8
Total	763	7	351	537

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Central Ave	**Minor Street** I-210 WB Off-ramp	**Warrant Met**
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**888**	**763**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	Central Ave		Project	Duarte Station Specific Plan
Minor Street	I-210 WB Off-ramp		Scenario	Future plus Project
			Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	4	0
Through	0	0	347	529
Right	375	7	0	8
Total	763	7	351	537

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street: 2

Total Approaches: 4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle): 228.3

Approach with Worst Case Delay: EB

Total Vehicles on Approach: 351

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**22.3**	**763**	**1,658**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

Project	Duarte Station Specific Plan
Scenario	Future plus Project
Peak Hour	PM

Major Street	Central Ave
Minor Street	I-210 WB Off-ramp

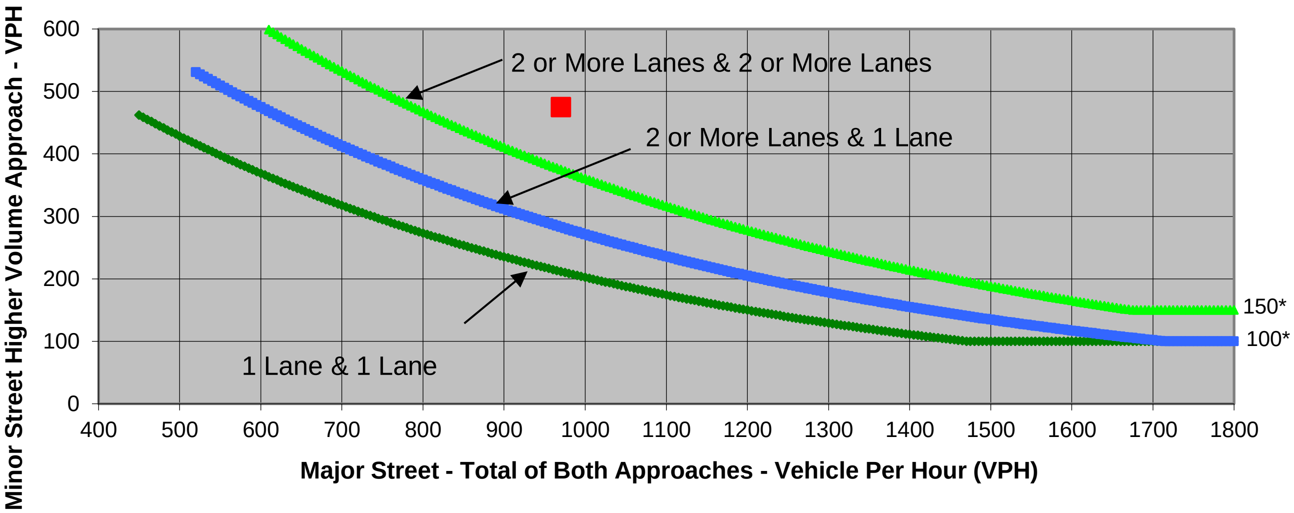
Turn Movement Volumes

	NB	SB	EB	WB
Left	258	3	6	0
Through	0	0	427	527
Right	217	24	0	10
Total	475	27	433	537

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Central Ave	Minor Street I-210 WB Off-ramp	Warrant Met
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**970**	**475**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Major Street	Central Ave	Project	Duarte Station Specific Plan
Minor Street	I-210 WB Off-ramp	Scenario	Future plus Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	258	3	6	0
Through	0	0	427	527
Right	217	24	0	10
Total	475	27	433	537

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	168.0
Approach with Worst Case Delay	EB
Total Vehicles on Approach	433

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**20.2**	**475**	**1,472**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

Project	Duarte Station Specific Plan
Scenario	Future plus Project
Peak Hour	AM

Major Street	Duarte Road
Minor Street	Village Road

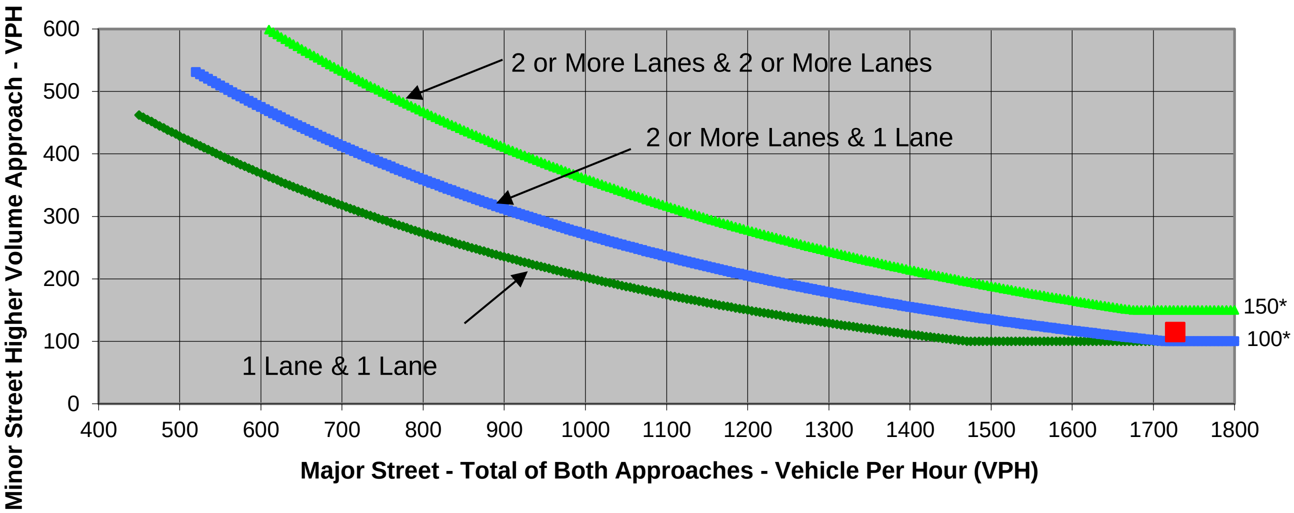
Turn Movement Volumes

	NB	SB	EB	WB
Left	91	0	0	207
Through	0	0	665	451
Right	24	0	404	0
Total	115	0	1,069	658

Major Street Direction

	North/South
X	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duarte Road	**Minor Street** Village Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,727**	**115**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

			Project	Duarte Station Specific Plan
Major Street	Duarte Road		Scenario	Future plus Project
Minor Street	Village Road		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	91	0	0	207
Through	0	0	665	451
Right	24	0	404	0
Total	115	0	1,069	658

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	406.8
Approach with Worst Case Delay	EB
Total Vehicles on Approach	1,069

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
Future plus Project	**120.8**	**115**	**1,842**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR & PEERS

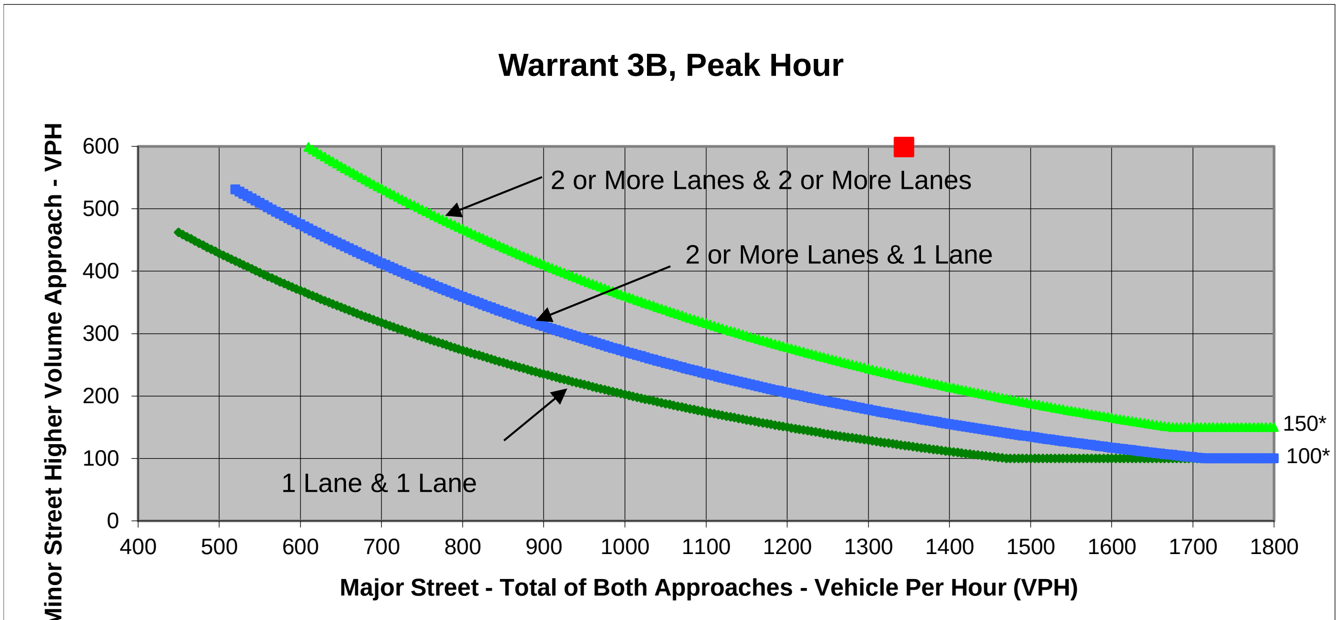
			Project	Duarte Station Specific Plan
Major Street	Duarte Road		Scenario	Future plus Project
Minor Street	Village Road		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	0	17
Through	0	0	649	612
Right	211	0	66	0
Total	599	0	715	629

Major Street Direction

	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duarte Road	**Minor Street** Village Road	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,344**	**599**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

		Project	Duarte Station Specific Plan
Major Street	Duarte Road	Scenario	Future plus Project
Minor Street	Village Road	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	388	0	0	17
Through	0	0	649	612
Right	211	0	66	0
Total	599	0	715	629

Major Street Direction

	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	367.2
Approach with Worst Case Delay	EB
Total Vehicles on Approach	715

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**72.9**	**599**	**1,943**
Limiting Value	**4**	**100**	**650**
Condition Satisfied?	**Met**	**Met**	**Met**
Warrant Met	**YES**		

FEHR PEERS

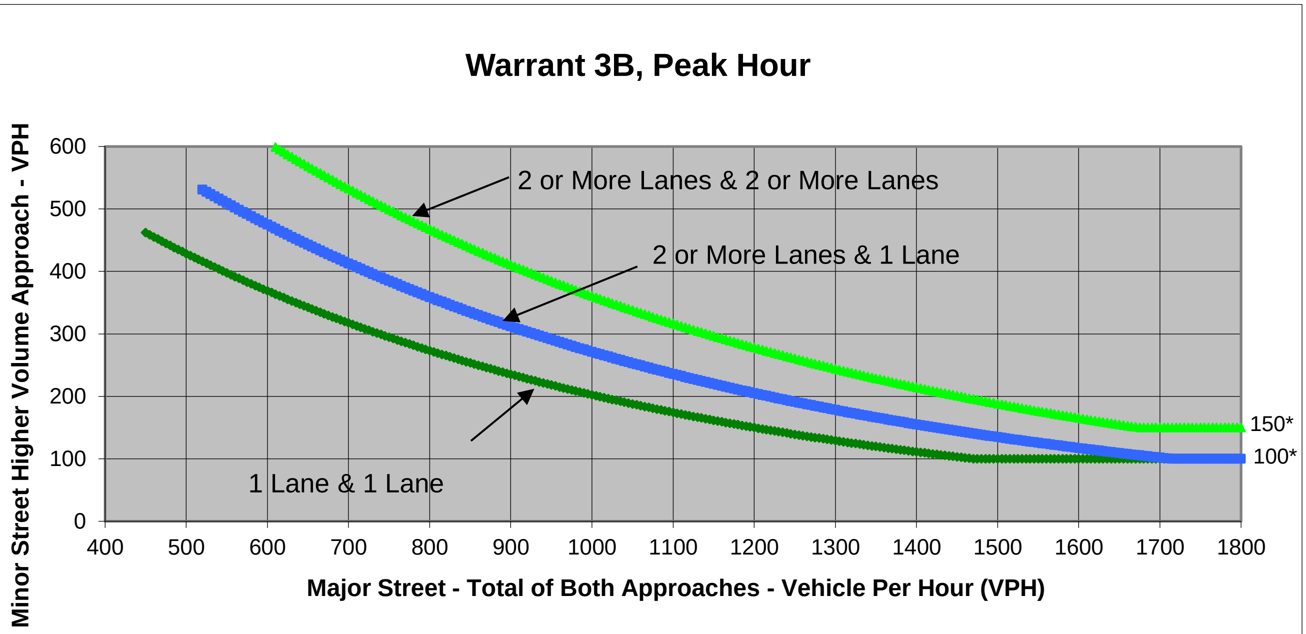
			Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue		Scenario	Future plus Project
Minor Street	Evergreen Street		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	102	47	4
Through	8	5	21	17
Right	2	29	0	23
Total	15	136	68	44

Major Street Direction

X	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Duncannan Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**112**	**136**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Project	Duarte Station Specific Plan
Scenario	Future plus Project
Peak Hour	AM

Major Street	Duncannan Avenue
Minor Street	Evergreen Street

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	102	47	4
Through	8	5	21	17
Right	2	29	0	23
Total	15	136	68	44

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.9
Approach with Worst Case Delay	EB
Total Vehicles on Approach	68

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**0.1**	**68**	**263**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR & PEERS

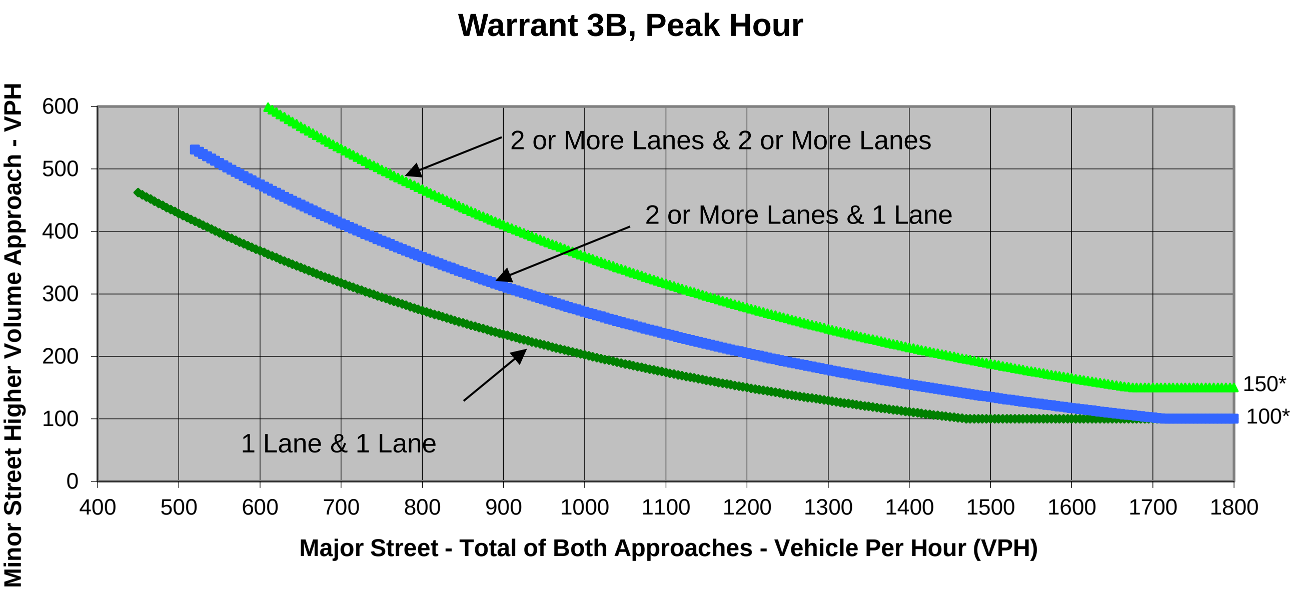
			Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue		Scenario	Future plus Project
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	70	33	0
Through	9	14	25	27
Right	3	36	1	34
Total	13	120	59	61

Major Street Direction

X	North/South
X	East/West



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	**Minor Street**	**Warrant Met**
	Duncannan Avenue	Evergreen Street	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**120**	**120**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

		Project	Duarte Station Specific Plan
Major Street	Duncannan Avenue	Scenario	Future plus Project
Minor Street	Evergreen Street	Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	1	70	33	0
Through	9	14	25	27
Right	3	36	1	34
Total	13	120	59	61

Major Street Direction

X	North/South
X	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	7.7
Approach with Worst Case Delay	EB
Total Vehicles on Approach	59

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**0.1**	**61**	**253**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Not Met**
Warrant Met	**NO**		

FEHR PEERS

Project	Duarte Station Specific Plan
Scenario	Future plus Project
Peak Hour	AM

Major Street	Highland Avenue
Minor Street	Evergreen Street

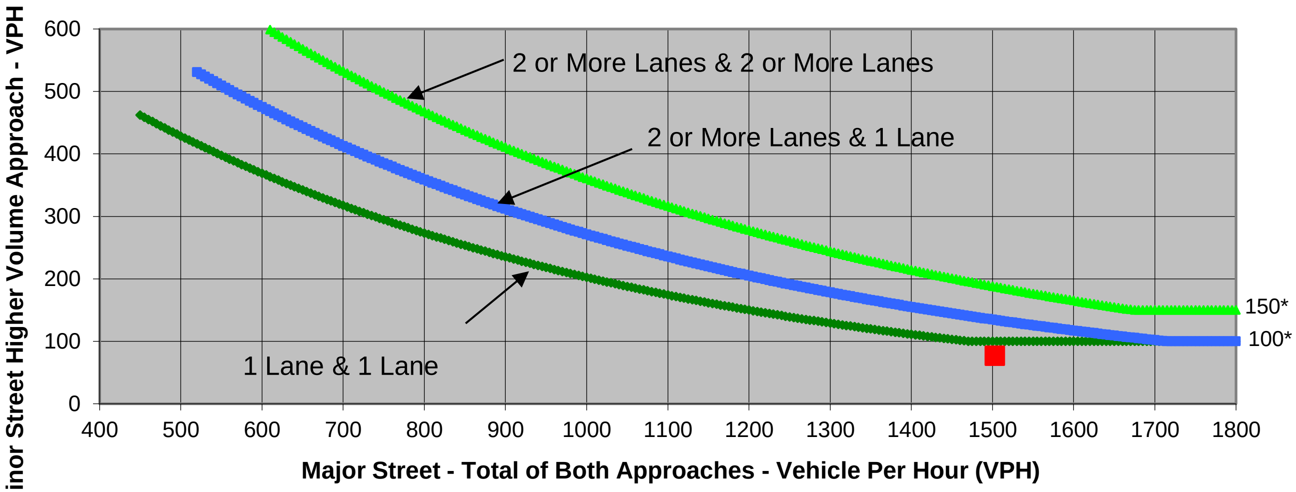
Turn Movement Volumes

	NB	SB	EB	WB
Left	7	93	23	0
Through	531	837	2	2
Right	3	32	52	13
Total	541	962	77	15

Major Street Direction

X	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	**Minor Street** Evergreen Street	**Warrant Met**
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,503**	**77**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Project	Duarte Station Specific Plan
Scenario	Future plus Project
Peak Hour	AM

Major Street	Highland Avenue
Minor Street	Evergreen Street

Turn Movement Volumes

	NB	SB	EB	WB
Left	7	93	23	0
Through	531	837	2	2
Right	3	32	52	13
Total	541	962	77	15

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	42.7
Approach with Worst Case Delay	EB
Total Vehicles on Approach	77

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**0.9**	**77**	**1,595**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

			Project	Duarte Station Specific Plan
Major Street	Highland Avenue		Scenario	Future plus Project
Minor Street	Evergreen Street		Peak Hour	PM

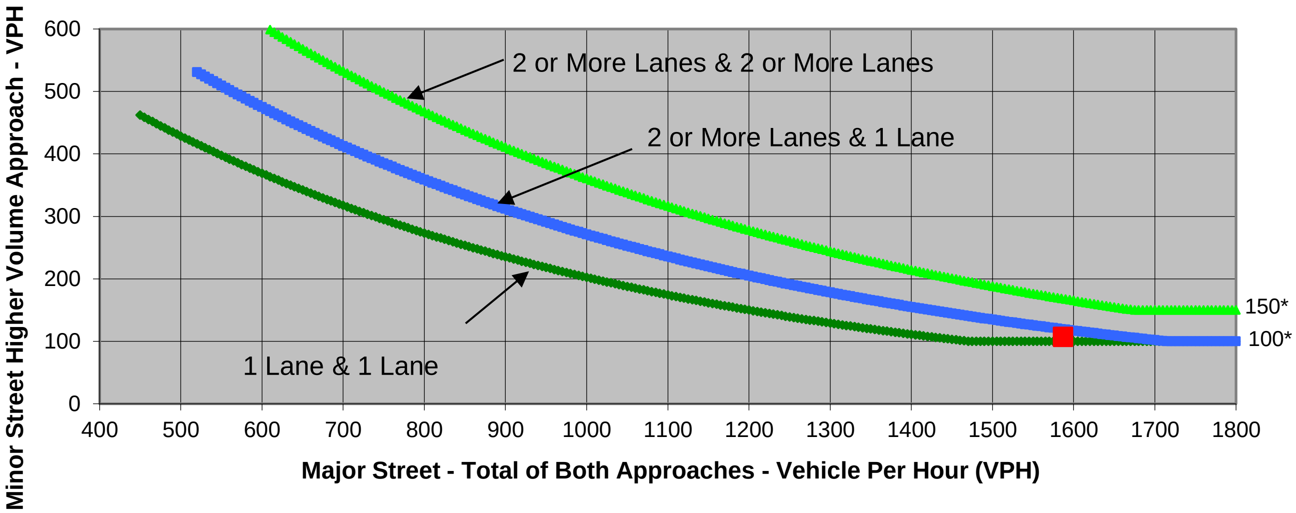
Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	45	3
Through	1,112	435	1	0
Right	5	17	27	104
Total	1,122	465	73	107

Major Street Direction

X	North/South
	East/West

Warrant 3B, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street Highland Avenue	Minor Street Evergreen Street	Warrant Met
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,587**	**107**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

			Project	Duarte Station Specific Plan
Major Street	Highland Avenue		Scenario	Future plus Project
Minor Street	Evergreen Street		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	5	13	45	3
Through	1,112	435	1	0
Right	5	17	27	104
Total	1,122	465	73	107

Major Street Direction

X	North/South
	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	1
Total Approaches	4

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	45.1
Approach with Worst Case Delay	EB
Total Vehicles on Approach	73

Warrant 3A, Peak Hour

	Peak Hour Delay on Minor Approach (vehicle-hours)	Peak Hour Volume on Minor Approach (vph)	Peak Hour Entering Volume Serviced (vph)
Future plus Project	**0.9**	**107**	**1,767**
Limiting Value	**4**	**100**	**800**
Condition Satisfied?	**Not Met**	**Met**	**Met**
Warrant Met	**NO**		

APPENDIX F: FREEWAY ANALYSIS - MAINLINE & QUEUEING

CALTRANS ANALYSIS - QUEUEING

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	316	1192	215	525	709
v/c Ratio	0.47	0.85	0.80	0.29	0.67
Control Delay	24.7	28.5	54.3	6.8	30.0
Queue Delay	0.1	0.0	0.0	0.2	0.0
Total Delay	24.8	28.5	54.3	7.0	30.0
Queue Length 50th (ft)	130	262	126	80	177
Queue Length 95th (ft)	232	#448	118	12	238
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	678	1406	418	2001	1052
Starvation Cap Reductn	0	0	4	782	0
Spillback Cap Reductn	20	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.85	0.52	0.43	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

	↗	→	↘	↑	↘	↓
Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	322	345	202	570	353	512
v/c Ratio	0.64	0.34	0.34	0.42	0.64	0.24
Control Delay	33.7	25.6	4.9	21.5	17.4	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.4
Total Delay	33.7	25.6	4.9	21.5	18.1	11.3
Queue Length 50th (ft)	158	80	0	110	136	101
Queue Length 95th (ft)	228	108	45	194	219	137
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	607	1215	676	1373	642	2134
Starvation Cap Reductn	0	0	0	0	85	1070
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.28	0.30	0.42	0.63	0.48

Intersection Summary

	→	↑	↱	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	754	383	212	241	397
v/c Ratio	0.60	0.48	0.41	0.61	0.21
Control Delay	11.2	22.7	6.2	28.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	22.7	6.2	28.5	8.1
Queue Length 50th (ft)	60	63	0	79	37
Queue Length 95th (ft)	109	100	45	143	57
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1267	790	518	395	1852
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.48	0.41	0.61	0.21

Intersection Summary

Intersection	
Int Delay, s/veh	41.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		✥	
Traffic Vol, veh/h	4	334	0	0	472	8	298	1	334	0	0	7
Future Vol, veh/h	4	334	0	0	472	8	298	1	334	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	363	0	0	513	9	324	1	363	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	522	0	-	-	-	0	893	893	363	1071	889	518
Stage 1	-	-	-	-	-	-	371	371	-	518	518	-
Stage 2	-	-	-	-	-	-	522	522	-	553	371	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1044	-	0	0	-	-	~ 262	281	682	198	282	558
Stage 1	-	-	0	0	-	-	649	620	-	541	533	-
Stage 2	-	-	0	0	-	-	538	531	-	517	620	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1044	-	-	-	-	-	~ 258	280	682	92	281	558
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 258	280	-	92	281	-
Stage 1	-	-	-	-	-	-	646	617	-	538	533	-
Stage 2	-	-	-	-	-	-	531	531	-	240	617	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	94.4	11.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	258	682	1044	-	-	-	558
HCM Lane V/C Ratio	1.255	0.532	0.004	-	-	-	0.014
HCM Control Delay (s)	182.2	16.1	8.5	0	-	-	11.5
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	15.9	3.2	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

18: I-605 Ramps/Mt Olive Dr & Huntington Ave

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	62	255	329	351	1153	90	455	458	264	91	454
v/c Ratio	0.46	0.26	0.49	1.40	0.90	0.14	0.99	0.97	0.43	0.35	0.86
Control Delay	64.4	34.9	6.3	242.5	47.9	4.7	83.0	78.5	8.1	48.5	63.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	34.9	6.3	242.5	47.9	4.7	83.0	78.5	8.1	48.5	63.3
Queue Length 50th (ft)	47	81	0	~364	456	0	370	370	9	64	174
Queue Length 95th (ft)	93	118	70	#552	#613	30	#655	#654	81	110	223
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	147	973	673	250	1280	637	461	473	614	337	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.26	0.49	1.40	0.90	0.14	0.99	0.97	0.43	0.27	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	268	570	308	571	1042
v/c Ratio	0.75	0.64	0.88	0.24	0.69
Control Delay	46.3	18.1	52.1	0.9	25.7
Queue Delay	0.2	0.0	1.0	0.3	0.1
Total Delay	46.5	18.1	53.1	1.1	25.8
Queue Length 50th (ft)	148	74	106	2	232
Queue Length 95th (ft)	194	106	m195	m15	#467
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	568	1240	419	2424	1509
Starvation Cap Reductn	0	0	22	1142	0
Spillback Cap Reductn	42	0	0	0	48
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.46	0.78	0.45	0.71

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

2: Mountain Ave & Evergreen St

	↗	→	↘	↑	↘	↓
Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	273	1258	146	778	475	599
v/c Ratio	0.45	1.03	0.24	0.86	0.97	0.31
Control Delay	25.7	63.1	9.7	41.7	49.4	15.0
Queue Delay	0.0	0.0	0.0	1.7	43.5	1.1
Total Delay	25.7	63.1	9.7	43.4	92.9	16.2
Queue Length 50th (ft)	119	~408	20	214	220	140
Queue Length 95th (ft)	191	#538	62	#315	#405	186
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	613	1226	610	907	501	1922
Starvation Cap Reductn	0	0	0	0	76	1038
Spillback Cap Reductn	0	0	0	43	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.03	0.24	0.90	1.12	0.68

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues

Caltrans Analysis - Existing Conditions

7: Buena Vista St & Evergreen St

PM Peak

	→	↑	↱	↲	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	722	557	266	203	403
v/c Ratio	0.63	0.82	0.51	0.41	0.21
Control Delay	21.7	39.3	7.6	23.8	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	39.3	7.6	23.8	8.9
Queue Length 50th (ft)	129	122	0	71	44
Queue Length 95th (ft)	184	#199	57	127	66
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1147	677	518	490	1890
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.63	0.82	0.51	0.41	0.21

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	28.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		↰↑↱	
Traffic Vol, veh/h	6	408	0	0	483	10	222	4	165	3	0	23
Future Vol, veh/h	6	408	0	0	483	10	222	4	165	3	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	443	0	0	525	11	241	4	179	3	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	536	0	-	-	-	0	1000	993	443	1080	988	531
Stage 1	-	-	-	-	-	-	457	457	-	531	531	-
Stage 2	-	-	-	-	-	-	543	536	-	549	457	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1032	-	0	0	-	-	~ 222	245	615	196	247	548
Stage 1	-	-	0	0	-	-	583	568	-	532	526	-
Stage 2	-	-	0	0	-	-	524	523	-	520	568	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1032	-	-	-	-	-	~ 210	243	615	136	245	548
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 210	243	-	136	245	-
Stage 1	-	-	-	-	-	-	578	563	-	527	526	-
Stage 2	-	-	-	-	-	-	500	523	-	362	563	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	94.9	14.5
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	210	615	1032	-	-	-	406
HCM Lane V/C Ratio	1.149	0.292	0.006	-	-	-	0.07
HCM Control Delay (s)	155.6	13.2	8.5	0	-	-	14.5
HCM Lane LOS	F	B	A	A	-	-	B
HCM 95th %tile Q(veh)	11.7	1.2	0	-	-	-	0.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Queues
18: I-605 Ramps/Mt Olive Dr & Huntington Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	97	920	866	276	507	46	236	244	687	84	344
v/c Ratio	0.54	0.90	1.08	0.85	0.36	0.07	0.70	0.69	0.93	0.36	0.73
Control Delay	57.2	49.8	71.7	64.7	24.3	0.2	49.8	49.1	31.1	46.8	51.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	49.8	71.7	64.7	24.3	0.2	49.8	49.1	31.1	46.8	51.2
Queue Length 50th (ft)	63	313	~396	177	127	0	146	151	108	52	112
Queue Length 95th (ft)	123	#519	#698	285	196	0	262	267	#382	104	171
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	363	1017	804	454	1420	696	412	429	783	434	860
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.90	1.08	0.61	0.36	0.07	0.57	0.57	0.88	0.19	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

AM Peak

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	316	1192	215	540	714
v/c Ratio	0.47	0.85	0.80	0.30	0.68
Control Delay	24.8	28.6	53.6	6.8	30.0
Queue Delay	0.1	0.0	0.0	0.3	0.0
Total Delay	24.8	28.6	53.7	7.0	30.0
Queue Length 50th (ft)	130	263	126	84	178
Queue Length 95th (ft)	232	#448	114	12	241
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	677	1404	418	2001	1055
Starvation Cap Reductn	0	0	4	781	0
Spillback Cap Reductn	20	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.48	0.85	0.52	0.44	0.68

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2: Mountain Ave & Evergreen St

	↗	→	↘	↑	↘	↓
Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	322	351	202	586	353	517
v/c Ratio	0.64	0.35	0.34	0.43	0.65	0.24
Control Delay	33.7	25.7	4.9	21.8	17.8	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.7	0.4
Total Delay	33.7	25.7	4.9	21.8	18.5	11.5
Queue Length 50th (ft)	158	82	0	115	136	103
Queue Length 95th (ft)	228	110	45	202	219	139
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	607	1215	676	1372	635	2134
Starvation Cap Reductn	0	0	0	0	84	1072
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.29	0.30	0.43	0.64	0.49

Intersection Summary

Queues
7: Buena Vista St & Evergreen St

Lane Group	EBT	NBT	NBR	SBL	SBT
	→	↑	↱	↘	↓
Lane Group Flow (vph)	767	401	258	241	397
v/c Ratio	0.60	0.51	0.47	0.61	0.21
Control Delay	11.1	23.1	6.3	28.5	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	23.1	6.3	28.5	8.1
Queue Length 50th (ft)	60	66	0	79	37
Queue Length 95th (ft)	109	105	50	143	57
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1276	790	553	395	1852
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.51	0.47	0.61	0.21

Intersection Summary

Intersection	
Int Delay, s/veh	48.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		↰		↱		✥	
Traffic Vol, veh/h	4	336	0	0	514	8	298	0	348	0	0	7
Future Vol, veh/h	4	336	0	0	514	8	298	0	348	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	365	0	0	559	9	324	0	378	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	-	-	-	0	941	-	365	1126	937	564
Stage 1	-	-	-	-	-	-	373	-	-	564	564	-
Stage 2	-	-	-	-	-	-	568	-	-	562	373	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1004	-	0	0	-	-	~ 243	0	680	182	265	525
Stage 1	-	-	0	0	-	-	648	0	-	510	508	-
Stage 2	-	-	0	0	-	-	508	0	-	512	618	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1004	-	-	-	-	-	~ 239	-	680	80	264	525
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 239	-	-	80	264	-
Stage 1	-	-	-	-	-	-	645	-	-	507	508	-
Stage 2	-	-	-	-	-	-	501	-	-	226	615	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	112.7	12
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	239	680	1004	-	-	-	525
HCM Lane V/C Ratio	1.355	0.556	0.004	-	-	-	0.014
HCM Control Delay (s)	224.8	16.7	8.6	0	-	-	12
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	17.5	3.4	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	62	271	417	351	1159	90	466	476	264	91	454
v/c Ratio	0.46	0.28	0.57	1.40	0.91	0.14	1.01	1.01	0.43	0.35	0.86
Control Delay	64.4	35.1	6.5	242.5	48.3	4.7	88.6	87.8	9.0	48.5	63.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	35.1	6.5	242.5	48.3	4.7	88.6	87.8	9.0	48.5	63.3
Queue Length 50th (ft)	47	86	0	~364	460	0	~388	~395	15	64	174
Queue Length 95th (ft)	93	124	80	#552	#618	30	#675	#689	89	110	223
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	147	973	737	250	1280	637	461	472	607	337	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.28	0.57	1.40	0.91	0.14	1.01	1.01	0.43	0.27	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	268	570	308	582	1058
v/c Ratio	0.75	0.65	0.88	0.24	0.70
Control Delay	46.3	18.7	52.0	0.9	26.0
Queue Delay	0.2	0.0	1.0	0.3	0.1
Total Delay	46.5	18.7	53.0	1.2	26.1
Queue Length 50th (ft)	148	76	106	2	238
Queue Length 95th (ft)	194	109	m0	m16	#478
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	568	1235	419	2424	1508
Starvation Cap Reductn	0	0	22	1138	0
Spillback Cap Reductn	43	0	0	0	48
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.46	0.78	0.45	0.72

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	273	1277	146	789	475	615
v/c Ratio	0.45	1.04	0.24	0.87	0.97	0.32
Control Delay	25.8	68.4	9.8	42.5	49.7	15.1
Queue Delay	0.0	0.0	0.0	1.8	43.2	1.2
Total Delay	25.8	68.4	9.8	44.3	92.9	16.3
Queue Length 50th (ft)	119	~421	20	218	221	145
Queue Length 95th (ft)	191	#551	62	#323	#406	192
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	611	1223	607	910	500	1922
Starvation Cap Reductn	0	0	0	0	76	1037
Spillback Cap Reductn	0	0	0	42	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	1.04	0.24	0.91	1.12	0.69

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

	→	↑	↱	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	763	568	298	203	403
v/c Ratio	0.66	0.84	0.55	0.41	0.21
Control Delay	22.0	40.5	7.8	23.8	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.0	40.5	7.8	23.8	8.9
Queue Length 50th (ft)	136	125	0	71	44
Queue Length 95th (ft)	194	#205	60	127	66
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1151	677	543	490	1890
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.84	0.55	0.41	0.21

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	31.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		↰		↱		✥	
Traffic Vol, veh/h	6	414	0	0	512	10	222	0	209	3	0	23
Future Vol, veh/h	6	414	0	0	512	10	222	0	209	3	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	450	0	0	557	11	241	0	227	3	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	-	-	-	0	1039	-	450	1141	1027	563
Stage 1	-	-	-	-	-	-	464	-	-	563	563	-
Stage 2	-	-	-	-	-	-	575	-	-	578	464	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1004	-	0	0	-	-	~ 209	0	609	178	234	526
Stage 1	-	-	0	0	-	-	578	0	-	511	509	-
Stage 2	-	-	0	0	-	-	503	0	-	501	564	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1004	-	-	-	-	-	~ 198	-	609	111	232	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 198	-	-	111	232	-
Stage 1	-	-	-	-	-	-	573	-	-	506	509	-
Stage 2	-	-	-	-	-	-	479	-	-	311	559	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	101.6	15.6
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	198	609	1004	-	-	-	367
HCM Lane V/C Ratio	1.219	0.373	0.006	-	-	-	0.077
HCM Control Delay (s)	183.7	14.4	8.6	0	-	-	15.6
HCM Lane LOS	F	B	A	A	-	-	C
HCM 95th %tile Q(veh)	12.6	1.7	0	-	-	-	0.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

18: I-605 Ramps/Mt Olive Dr & Huntington Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓
Lane Group Flow (vph)	97	930	926	276	523	46	283	290	687	84	344
v/c Ratio	0.54	0.93	1.16	0.85	0.37	0.07	0.81	0.80	0.92	0.36	0.74
Control Delay	57.5	52.6	102.3	64.7	24.6	0.2	57.9	56.6	29.7	46.9	51.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	52.6	102.3	64.7	24.6	0.2	57.9	56.6	29.7	46.9	51.7
Queue Length 50th (ft)	63	318	~480	177	132	0	182	186	108	52	112
Queue Length 95th (ft)	123	#527	#795	285	202	0	#351	#352	#382	104	171
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	358	1005	801	448	1407	690	407	422	780	428	850
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.93	1.16	0.62	0.37	0.07	0.70	0.69	0.88	0.20	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	326	1290	222	571	850
v/c Ratio	0.51	0.96	0.81	0.31	0.76
Control Delay	27.2	41.7	52.1	5.2	31.6
Queue Delay	0.2	0.0	0.1	0.3	0.1
Total Delay	27.4	41.7	52.1	5.5	31.7
Queue Length 50th (ft)	145	319	130	37	212
Queue Length 95th (ft)	240	#505	125	17	#308
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	635	1342	418	2001	1122
Starvation Cap Reductn	0	0	6	828	0
Spillback Cap Reductn	42	0	0	0	12
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.96	0.54	0.49	0.77

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

	↗	→	↘	↑	↘	↓
Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	357	355	209	594	425	550
v/c Ratio	0.68	0.34	0.34	0.49	0.78	0.26
Control Delay	34.2	24.8	4.8	24.9	23.0	11.7
Queue Delay	0.0	0.0	0.0	0.0	2.1	0.5
Total Delay	34.2	24.8	4.8	24.9	25.1	12.2
Queue Length 50th (ft)	172	79	0	133	173	117
Queue Length 95th (ft)	257	112	45	204	m286	153
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	607	1215	680	1217	608	2083
Starvation Cap Reductn	0	0	0	0	83	1038
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.29	0.31	0.49	0.81	0.53

Intersection Summary

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

7: Buena Vista St & Evergreen St

	→	↑	↱	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	922	435	235	260	549
v/c Ratio	0.76	0.55	0.44	0.66	0.30
Control Delay	17.2	23.7	6.2	30.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	23.7	6.2	30.9	8.6
Queue Length 50th (ft)	106	73	0	86	53
Queue Length 95th (ft)	170	114	47	#172	80
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1219	790	536	395	1852
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.76	0.55	0.44	0.66	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	94.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		↖		↗		✥	
Traffic Vol, veh/h	4	345	0	0	487	8	388	0	361	0	0	7
Future Vol, veh/h	4	345	0	0	487	8	388	0	361	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	375	0	0	529	9	422	0	392	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	538	0	-	-	-	0	921	-	375	1113	917	534
Stage 1	-	-	-	-	-	-	383	-	-	534	534	-
Stage 2	-	-	-	-	-	-	538	-	-	579	383	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1030	-	0	0	-	-	~ 251	0	671	186	272	546
Stage 1	-	-	0	0	-	-	640	0	-	530	524	-
Stage 2	-	-	0	0	-	-	527	0	-	501	612	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1030	-	-	-	-	-	~ 246	-	671	77	271	546
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 246	-	-	77	271	-
Stage 1	-	-	-	-	-	-	637	-	-	527	524	-
Stage 2	-	-	-	-	-	-	520	-	-	207	609	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	201.8	11.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	246	671	1030	-	-	-	546
HCM Lane V/C Ratio	1.714	0.585	0.004	-	-	-	0.014
HCM Control Delay (s)	$ 373.1	17.6	8.5	0	-	-	11.7
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	27.7	3.8	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

18: I-605 Ramps/Mt Olive Dr & Huntington Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	64	284	390	362	1226	93	515	525	273	95	469
v/c Ratio	0.47	0.29	0.54	1.45	0.96	0.15	1.13	1.13	0.46	0.35	0.87
Control Delay	65.1	35.3	6.4	260.0	55.4	5.1	123.8	122.6	11.2	48.3	63.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	35.3	6.4	260.0	55.4	5.1	123.8	122.6	11.2	48.3	63.8
Queue Length 50th (ft)	48	91	0	~381	~511	0	~488	~496	29	67	180
Queue Length 95th (ft)	95	130	77	#572	#676	32	#766	#777	110	115	231
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	147	973	718	250	1280	637	455	465	592	337	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.29	0.54	1.45	0.96	0.15	1.13	1.13	0.46	0.28	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

PM Peak

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	277	774	317	688	1284
v/c Ratio	0.61	0.90dr	0.89	0.31	0.98
Control Delay	34.1	27.1	50.5	1.6	52.3
Queue Delay	0.3	0.0	2.2	0.3	39.6
Total Delay	34.3	27.1	52.7	2.0	91.9
Queue Length 50th (ft)	126	140	148	15	~470
Queue Length 95th (ft)	201	204	m0	m17	#626
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	568	1174	418	2223	1307
Starvation Cap Reductn	0	0	33	896	0
Spillback Cap Reductn	48	0	0	0	165
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.66	0.82	0.52	1.12

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

2: Mountain Ave & Evergreen St

	↗	→	↘	↑	↘	↓
Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	360	1298	150	823	624	623
v/c Ratio	0.59	1.07	0.25	0.92	1.24	0.32
Control Delay	29.2	76.3	10.0	48.7	138.6	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.9	1.0
Total Delay	29.2	76.3	10.0	48.7	139.5	13.2
Queue Length 50th (ft)	167	~434	21	233	~389	134
Queue Length 95th (ft)	258	#565	63	#348	m#455	m151
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	607	1215	605	894	502	1922
Starvation Cap Reductn	0	0	0	0	51	977
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	1.07	0.25	0.92	1.38	0.66

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

7: Buena Vista St & Evergreen St

	→	↑	↱	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	801	757	368	221	466
v/c Ratio	0.70	1.12	0.61	0.45	0.25
Control Delay	23.2	101.3	8.1	24.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.2	101.3	8.1	24.5	9.2
Queue Length 50th (ft)	148	~202	0	78	52
Queue Length 95th (ft)	209	#306	66	138	77
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1146	677	600	490	1890
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.70	1.12	0.61	0.45	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	49.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰↑			↑↱		↰		↱		↰↑↱	
Traffic Vol, veh/h	6	421	0	0	498	10	258	0	173	3	0	24
Future Vol, veh/h	6	421	0	0	498	10	258	0	173	3	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	458	0	0	541	11	280	0	188	3	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	552	0	-	-	-	0	1032	-	458	1113	1019	547
Stage 1	-	-	-	-	-	-	472	-	-	547	547	-
Stage 2	-	-	-	-	-	-	560	-	-	566	472	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1018	-	0	0	-	-	~ 211	0	603	186	237	537
Stage 1	-	-	0	0	-	-	573	0	-	521	517	-
Stage 2	-	-	0	0	-	-	513	0	-	509	559	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	1018	-	-	-	-	-	~ 199	-	603	127	235	537
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 199	-	-	127	235	-
Stage 1	-	-	-	-	-	-	568	-	-	516	517	-
Stage 2	-	-	-	-	-	-	488	-	-	347	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	159	14.8
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	199	603	1018	-	-	-	395
HCM Lane V/C Ratio	1.409	0.312	0.006	-	-	-	0.074
HCM Control Delay (s)	256.4	13.7	8.6	0	-	-	14.8
HCM Lane LOS	F	B	A	A	-	-	B
HCM 95th %tile Q(veh)	16.5	1.3	0	-	-	-	0.2

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

18: I-605 Ramps/Mt Olive Dr & Huntington Ave

PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	100	997	1000	285	570	47	295	307	709	86	355
v/c Ratio	0.56	1.01	1.27	0.86	0.41	0.07	0.83	0.83	0.95	0.37	0.76
Control Delay	59.2	70.6	148.7	66.0	25.5	0.2	59.5	59.4	34.8	47.3	53.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	70.6	148.7	66.0	25.5	0.2	59.5	59.4	34.8	47.3	53.2
Queue Length 50th (ft)	66	~383	~599	185	147	0	194	203	137	54	117
Queue Length 95th (ft)	126	#586	#926	#312	224	0	#375	#388	#425	106	176
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	352	984	790	439	1400	688	399	413	773	420	833
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	1.01	1.27	0.65	0.41	0.07	0.74	0.74	0.92	0.20	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

AM Peak

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	326	1290	222	586	855
v/c Ratio	0.52	0.96	0.81	0.31	0.76
Control Delay	27.3	42.3	51.3	5.1	31.6
Queue Delay	0.2	0.0	0.1	0.3	0.1
Total Delay	27.6	42.3	51.4	5.4	31.7
Queue Length 50th (ft)	146	321	120	24	213
Queue Length 95th (ft)	240	#505	122	17	#313
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	632	1338	418	2001	1126
Starvation Cap Reductn	0	0	6	829	0
Spillback Cap Reductn	44	0	0	0	12
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.55	0.96	0.54	0.50	0.77

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

2: Mountain Ave & Evergreen St

AM Peak

	↗	→	↘	↑	↘	↓
Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	357	362	209	609	425	555
v/c Ratio	0.68	0.34	0.34	0.50	0.78	0.27
Control Delay	34.2	24.9	4.8	25.3	23.5	11.8
Queue Delay	0.0	0.0	0.0	0.0	2.4	0.5
Total Delay	34.2	24.9	4.8	25.3	26.0	12.3
Queue Length 50th (ft)	172	81	0	140	176	118
Queue Length 95th (ft)	257	114	45	211	m285	155
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	607	1215	680	1212	602	2083
Starvation Cap Reductn	0	0	0	0	85	1040
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.30	0.31	0.50	0.82	0.53

Intersection Summary

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

7: Buena Vista St & Evergreen St

	→	↑	↱	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	935	453	280	260	549
v/c Ratio	0.77	0.57	0.49	0.66	0.30
Control Delay	17.7	24.1	6.4	30.9	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	24.1	6.4	30.9	8.6
Queue Length 50th (ft)	108	76	0	86	53
Queue Length 95th (ft)	175	118	52	#172	80
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1219	790	571	395	1852
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.77	0.57	0.49	0.66	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	105.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		↰		↱		✥	
Traffic Vol, veh/h	4	347	0	0	529	8	388	0	375	0	0	7
Future Vol, veh/h	4	347	0	0	529	8	388	0	375	0	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	377	0	0	575	9	422	0	408	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	-	-	-	0	969	-	377	1169	965	580
Stage 1	-	-	-	-	-	-	385	-	-	580	580	-
Stage 2	-	-	-	-	-	-	584	-	-	589	385	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	991	-	0	0	-	-	~ 233	0	670	170	255	514
Stage 1	-	-	0	0	-	-	638	0	-	500	500	-
Stage 2	-	-	0	0	-	-	498	0	-	494	611	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	991	-	-	-	-	-	~ 229	-	670	66	254	514
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 229	-	-	66	254	-
Stage 1	-	-	-	-	-	-	635	-	-	498	500	-
Stage 2	-	-	-	-	-	-	491	-	-	192	608	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	228.3	12.1
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	229	670	991	-	-	-	514
HCM Lane V/C Ratio	1.842	0.608	0.004	-	-	-	0.015
HCM Control Delay (s)	$ 431.2	18.4	8.6	0	-	-	12.1
HCM Lane LOS	F	C	A	A	-	-	B
HCM 95th %tile Q(veh)	29.5	4.1	0	-	-	-	0

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

18: I-605 Ramps/Mt Olive Dr & Huntington Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	64	299	478	362	1232	93	533	537	273	95	469
v/c Ratio	0.47	0.31	0.61	1.45	0.96	0.15	1.17	1.15	0.46	0.35	0.87
Control Delay	65.1	35.5	6.8	260.0	56.2	5.1	137.5	131.5	11.8	48.3	63.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.1	35.5	6.8	260.0	56.2	5.1	137.5	131.5	11.8	48.3	63.8
Queue Length 50th (ft)	48	96	0	~381	~532	0	~518	~517	32	67	180
Queue Length 95th (ft)	95	137	87	#572	#681	32	#800	#800	115	115	231
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	147	973	781	250	1280	637	455	465	589	337	673
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.31	0.61	1.45	0.96	0.15	1.17	1.15	0.46	0.28	0.70

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

1: Mountain Ave & Central Ave/I-210 WB Off-ramp

	↙	←	↖	↑	↓
Lane Group	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	277	774	317	699	1300
v/c Ratio	0.60	0.91dr	0.89	0.31	1.00
Control Delay	34.0	27.5	50.0	1.7	55.6
Queue Delay	0.3	0.0	2.2	0.3	36.9
Total Delay	34.3	27.5	52.1	2.0	92.6
Queue Length 50th (ft)	126	142	147	16	~481
Queue Length 95th (ft)	201	206	m0	m18	#638
Internal Link Dist (ft)		2130		247	297
Turn Bay Length (ft)			200		
Base Capacity (vph)	568	1170	418	2220	1305
Starvation Cap Reductn	0	0	33	895	0
Spillback Cap Reductn	48	0	0	0	165
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.66	0.82	0.53	1.14

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

	↗	→	↘	↑	↘	↓
Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Group Flow (vph)	360	1317	150	834	624	639
v/c Ratio	0.59	1.08	0.25	0.93	1.24	0.33
Control Delay	29.2	81.7	10.3	50.5	138.3	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.9	1.0
Total Delay	29.2	81.7	10.3	50.5	139.2	13.4
Queue Length 50th (ft)	167	~446	22	237	~390	140
Queue Length 95th (ft)	258	#577	64	#356	m#446	m155
Internal Link Dist (ft)		1293		344		247
Turn Bay Length (ft)			150		210	
Base Capacity (vph)	607	1215	603	894	502	1922
Starvation Cap Reductn	0	0	0	0	51	974
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	1.08	0.25	0.93	1.38	0.67

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

7: Buena Vista St & Evergreen St

	→	↑	↗	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	842	768	400	221	466
v/c Ratio	0.73	1.13	0.64	0.45	0.25
Control Delay	23.8	107.2	8.3	24.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	107.2	8.3	24.5	9.2
Queue Length 50th (ft)	155	~207	0	78	52
Queue Length 95th (ft)	220	#312	69	138	77
Internal Link Dist (ft)	2524	98			219
Turn Bay Length (ft)					
Base Capacity (vph)	1150	677	626	490	1890
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.73	1.13	0.64	0.45	0.25

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection	
Int Delay, s/veh	54.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱		↰		↱		✥	
Traffic Vol, veh/h	6	427	0	0	527	10	258	0	217	3	0	24
Future Vol, veh/h	6	427	0	0	527	10	258	0	217	3	0	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	535	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	464	0	0	573	11	280	0	236	3	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	-	-	-	0	1070	-	464	1175	1057	579
Stage 1	-	-	-	-	-	-	478	-	-	579	579	-
Stage 2	-	-	-	-	-	-	592	-	-	596	478	-
Critical Hdwy	4.12	-	-	-	-	-	7.12	-	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	-	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	991	-	0	0	-	-	~ 199	0	598	168	225	515
Stage 1	-	-	0	0	-	-	568	0	-	501	501	-
Stage 2	-	-	0	0	-	-	493	0	-	490	556	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	991	-	-	-	-	-	~ 187	-	598	101	223	515
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 187	-	-	101	223	-
Stage 1	-	-	-	-	-	-	562	-	-	496	501	-
Stage 2	-	-	-	-	-	-	468	-	-	294	550	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	168	16.1
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	187	598	991	-	-	-	354
HCM Lane V/C Ratio	1.5	0.394	0.007	-	-	-	0.083
HCM Control Delay (s)	296.8	14.9	8.7	0	-	-	16.1
HCM Lane LOS	F	B	A	A	-	-	C
HCM 95th %tile Q(veh)	17.6	1.9	0	-	-	-	0.3

Notes

~: Volume exceeds capacity $: Delay exceeds 300s   +: Computation Not Defined   *: All major volume in platoon

18: I-605 Ramps/Mt Olive Dr & Huntington Ave

	↗	→	↘	↙	←	↖	↖	↑	↗	↘	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	100	1008	1060	285	586	47	344	351	709	86	355
v/c Ratio	0.58	1.05	1.35	0.87	0.46	0.07	0.89	0.88	0.93	0.38	0.78
Control Delay	60.4	81.0	187.2	67.8	27.6	0.2	66.4	64.7	30.9	47.6	55.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	81.0	187.2	67.8	27.6	0.2	66.4	64.7	30.9	47.6	55.0
Queue Length 50th (ft)	66	~391	~685	185	152	0	234	240	137	54	117
Queue Length 95th (ft)	126	#595	#1021	#312	231	0	#465	#470	#425	106	176
Internal Link Dist (ft)		712			645			1250			786
Turn Bay Length (ft)	90		240	180		100	515			75	
Base Capacity (vph)	341	961	783	426	1276	636	386	398	765	407	807
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	1.05	1.35	0.67	0.46	0.07	0.89	0.88	0.93	0.21	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

CALTRANS ANALYSIS - MAINLINE

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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   3751           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     998            v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1023           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1023           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  15.7           pc/mi/ln
Level of service, LOS                       B

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6137           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1632           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1673           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1673           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              63.9           mi/h
Number of lanes, N                          4
Density, D                                  26.2           pc/mi/ln
Level of service, LOS                       D

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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5765           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1533           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1572           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1572           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              64.6           mi/h
Number of lanes, N                          4
Density, D                                  24.3           pc/mi/ln
Level of service, LOS                       C

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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4831          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1285          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1317          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        64.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1317          pc/h/ln
Free-flow speed, FFS                        64.0          mi/h
Average passenger-car speed, S              65.0          mi/h
Number of lanes, N                          4
Density, D                                  20.3          pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4266          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1135          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1163          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        67.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1163          pc/h/ln
Free-flow speed, FFS                        67.0          mi/h
Average passenger-car speed, S              65.0          mi/h
Number of lanes, N                          4
Density, D                                  17.9          pc/mi/ln
Level of service, LOS                       B

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4974           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1323           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1356           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1356           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  20.9           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4616           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1228           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1258           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1258           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  19.4           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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E-mail:

_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4948           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1316           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1349           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1349           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  20.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5586           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1486           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1218           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1218           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  18.7           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   7015           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1866           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1530           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1530           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              64.8           mi/h
Number of lanes, N                          5
Density, D                                  23.6           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5851           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1556           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1276           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1276           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  19.6           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6648           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1768           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1450           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1450           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  22.3           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4854          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1291          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1323          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        66.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1323          pc/h/ln
Free-flow speed, FFS                        66.0          mi/h
Average passenger-car speed, S              65.0          mi/h
Number of lanes, N                          4
Density, D                                  20.4          pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5161           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1373           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1407           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1407           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  21.6           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                SB south of Live Oak
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5929           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1577           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1616           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1616           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              64.3           mi/h
Number of lanes, N                          4
Density, D                                  25.1           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                 Michael Kao
Agency or Company:       Fehr & Peers
Date Performed:          4/9/2019
Analysis Time Period:    8-9 AM
Freeway/Direction:       I-605
From/To:                 SB south of Live Oak
Jurisdiction:
Analysis Year:           2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6065           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1613           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1653           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1653           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              64.1           mi/h
Number of lanes, N                          4
Density, D                                  25.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   3825           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1017           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1043           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1043           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  16.0           pc/mi/ln
Level of service, LOS                       B

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6161           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1639           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1680           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1680           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              63.9           mi/h
Number of lanes, N                          4
Density, D                                  26.3           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5813           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1546           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1585           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1585           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              64.5           mi/h
Number of lanes, N                          4
Density, D                                  24.6           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4901           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1303           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1336           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1336           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  20.6           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4313           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1147           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1176           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1176           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  18.1           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5022           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1336           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1369           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1369           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  21.1           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4672           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1243           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1274           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1274           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  19.6           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                 Michael Kao
Agency or Company:       Fehr & Peers
Date Performed:          4/9/2019
Analysis Time Period:    8-9 AM
Freeway/Direction:       I-210
From/To:                 WB between Buena Vista and Highland
Jurisdiction:            land
Analysis Year:           2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                    4979           veh/h
Peak-hour factor, PHF                        0.94
Peak 15-min volume, v15                      1324           v
Trucks and buses                             5              %
Recreational vehicles                        0              %
Terrain type:                                Level
    Grade                                    -              %
    Segment length                           -              mi
Trucks and buses PCE, ET                     1.5
Recreational vehicle PCE, ER                 1.2
Heavy vehicle adjustment, fHV                0.976
Driver population factor, fp                 1.00
Flow rate, vp                                1357           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                   -              ft
Right-side lateral clearance                 -              ft
Total ramp density, TRD                      -              ramps/mi
Number of lanes, N                           4
Free-flow speed:                             Measured
     FFS or BFFS                             66.0           mi/h
Lane width adjustment, fLW                   -              mi/h
Lateral clearance adjustment, fLC            -              mi/h
TRD adjustment                               -              mi/h
Free-flow speed, FFS                         66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                                1357           pc/h/ln
Free-flow speed, FFS                         66.0           mi/h
Average passenger-car speed, S               65.0           mi/h
Number of lanes, N                           4
Density, D                                   20.9           pc/mi/ln
Level of service, LOS                        C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5615          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1493          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1225          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        66.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1225          pc/h/ln
Free-flow speed, FFS                        66.0          mi/h
Average passenger-car speed, S              65.0          mi/h
Number of lanes, N                          5
Density, D                                  18.8          pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   7057           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1877           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1539           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1539           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              64.7           mi/h
Number of lanes, N                          5
Density, D                                  23.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5896           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1568           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1286           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1286           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  19.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6662           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1772           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1453           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1453           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  22.4           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4928           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1311           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1343           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1343           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  20.7           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5185           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1379           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1413           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1413           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  21.7           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                SB south of Live Oak
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5977           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1590           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1629           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1629           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              64.3           mi/h
Number of lanes, N                          4
Density, D                                  25.4           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-605
From/To:                SB south of Live Oak
Jurisdiction:
Analysis Year:          2018
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6135           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1632           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1672           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1672           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              64.0           mi/h
Number of lanes, N                          4
Density, D                                  26.1           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   3994           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1062           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1089           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1089           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  16.8           pc/mi/ln
Level of service, LOS                       B

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6489           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1726           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1769           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1769           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              63.1           mi/h
Number of lanes, N                          4
Density, D                                  28.0           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6126           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1629           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1670           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1670           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              64.0           mi/h
Number of lanes, N                          4
Density, D                                  26.1           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5045           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1342           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1375           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1375           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  21.2           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4623          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1230          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1260          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        67.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1260          pc/h/ln
Free-flow speed, FFS                        67.0          mi/h
Average passenger-car speed, S              65.0          mi/h
Number of lanes, N                          4
Density, D                                  19.4          pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5214           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1387           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1421           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1421           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  21.9           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4967           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1321           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1354           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1354           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  20.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5256           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1398           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1433           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1433           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  22.1           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5916           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1573           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1290           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1290           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  19.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   7298          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1941          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1592          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        66.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1592          pc/h/ln
Free-flow speed, FFS                        66.0          mi/h
Average passenger-car speed, S              64.5          mi/h
Number of lanes, N                          5
Density, D                                  24.7          pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6175           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1642           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1347           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1347           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  20.7           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6979           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1856           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1522           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1522           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              64.8           mi/h
Number of lanes, N                          5
Density, D                                  23.5           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5186           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1379           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1414           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1414           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  21.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5521           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1468           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1505           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1505           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              64.8           mi/h
Number of lanes, N                          4
Density, D                                  23.2           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                SB south of Live Oak
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6351           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1689           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1731           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1731           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              63.4           mi/h
Number of lanes, N                          4
Density, D                                  27.3           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                 Michael Kao
Agency or Company:       Fehr & Peers
Date Performed:          4/9/2019
Analysis Time Period:    8-9 AM
Freeway/Direction:       I-605
From/To:                 SB south of Live Oak
Jurisdiction:
Analysis Year:           2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6338           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1686           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1728           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1728           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              63.5           mi/h
Number of lanes, N                          4
Density, D                                  27.2           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4068           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1082           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1109           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1109           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  17.1           pc/mi/ln
Level of service, LOS                       B

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6513           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1732           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1775           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1775           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              63.0           mi/h
Number of lanes, N                          4
Density, D                                  28.2           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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Phone:                                      Fax:
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6174           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1642           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1683           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1683           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              63.9           mi/h
Number of lanes, N                          4
Density, D                                  26.4           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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Phone:                                      Fax:
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB west of Mountain
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5115          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1360          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1394          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            64.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        64.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1394          pc/h/ln
Free-flow speed, FFS                        64.0          mi/h
Average passenger-car speed, S              65.0          mi/h
Number of lanes, N                          4
Density, D                                  21.4          pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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                 HCS 2010: Basic Freeway Segments Release 6.2




Phone:                                      Fax:
E-mail:

_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   4670           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1242           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1273           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1273           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  19.6           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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E-mail:

_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5262          veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1399          v
Trucks and buses                            5             %
Recreational vehicles                       0             %
Terrain type:                               Level
    Grade                                   -             %
    Segment length                          -             mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1434          pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -             ft
Right-side lateral clearance                -             ft
Total ramp density, TRD                     -             ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0          mi/h
Lane width adjustment, fLW                  -             mi/h
Lateral clearance adjustment, fLC           -             mi/h
TRD adjustment                              -             mi/h
Free-flow speed, FFS                        67.0          mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1434          pc/h/ln
Free-flow speed, FFS                        67.0          mi/h
Average passenger-car speed, S              65.0          mi/h
Number of lanes, N                          4
Density, D                                  22.1          pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5023           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1336           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1369           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1369           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  21.1           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB between Buena Vista and Highland
Jurisdiction:           land
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5287           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1406           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1441           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1441           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  22.2           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5945           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1581           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1297           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1297           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  20.0           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                EB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   7340           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1952           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1601           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1601           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              64.4           mi/h
Number of lanes, N                          5
Density, D                                  24.8           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6220           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1654           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1356           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1356           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          5
Density, D                                  20.9           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-210
From/To:                WB east of Mt Olive
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6993           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1860           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1525           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          5
Free-flow speed:                            Measured
     FFS or BFFS                            64.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        64.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1525           pc/h/ln
Free-flow speed, FFS                        64.0           mi/h
Average passenger-car speed, S              64.8           mi/h
Number of lanes, N                          5
Density, D                                  23.5           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5260           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1399           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1434           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1434           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              65.0           mi/h
Number of lanes, N                          4
Density, D                                  22.1           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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                 HCS 2010: Basic Freeway Segments Release 6.2




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_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-605
From/To:                NB south of Live Oak
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   5545           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1475           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1512           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            66.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        66.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1512           pc/h/ln
Free-flow speed, FFS                        66.0           mi/h
Average passenger-car speed, S              64.8           mi/h
Number of lanes, N                          4
Density, D                                  23.3           pc/mi/ln
Level of service, LOS                       C

  Overall results are not computed when free-flow speed is less than 55 mph.
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                 HCS 2010: Basic Freeway Segments Release 6.2



Phone:                                      Fax:
E-mail:

_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   4-5 PM
Freeway/Direction:      I-605
From/To:                SB south of Live Oak
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6399           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1702           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1744           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1744           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              63.3           mi/h
Number of lanes, N                          4
Density, D                                  27.5           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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                 HCS 2010: Basic Freeway Segments Release 6.2





Phone:                                      Fax:
E-mail:

_________________________Operational Analysis__________________________________

Analyst:                Michael Kao
Agency or Company:      Fehr & Peers
Date Performed:         4/9/2019
Analysis Time Period:   8-9 AM
Freeway/Direction:      I-605
From/To:                SB south of Live Oak
Jurisdiction:
Analysis Year:          2025
Description:

_________________________Flow Inputs and Adjustments___________________________

Volume, V                                   6408           veh/h
Peak-hour factor, PHF                       0.94
Peak 15-min volume, v15                     1704           v
Trucks and buses                            5              %
Recreational vehicles                       0              %
Terrain type:                               Level
    Grade                                   -              %
    Segment length                          -              mi
Trucks and buses PCE, ET                    1.5
Recreational vehicle PCE, ER                1.2
Heavy vehicle adjustment, fHV               0.976
Driver population factor, fp                1.00
Flow rate, vp                               1747           pc/h/ln

_________________________Speed Inputs and Adjustments__________________________

Lane width                                  -              ft
Right-side lateral clearance                -              ft
Total ramp density, TRD                     -              ramps/mi
Number of lanes, N                          4
Free-flow speed:                            Measured
     FFS or BFFS                            67.0           mi/h
Lane width adjustment, fLW                  -              mi/h
Lateral clearance adjustment, fLC           -              mi/h
TRD adjustment                              -              mi/h
Free-flow speed, FFS                        67.0           mi/h

_________________________LOS and Performance Measures__________________________

Flow rate, vp                               1747           pc/h/ln
Free-flow speed, FFS                        67.0           mi/h
Average passenger-car speed, S              63.3           mi/h
Number of lanes, N                          4
Density, D                                  27.6           pc/mi/ln
Level of service, LOS                       D

  Overall results are not computed when free-flow speed is less than 55 mph.
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