

Appendix J1 Transportation Impact Study

Appendices

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City of Hope

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Draft Transportation
Impact Study
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**Transportation Impact Study for the
City of Hope**

**Prepared for:
Placeworks**

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FEHR  PEERS



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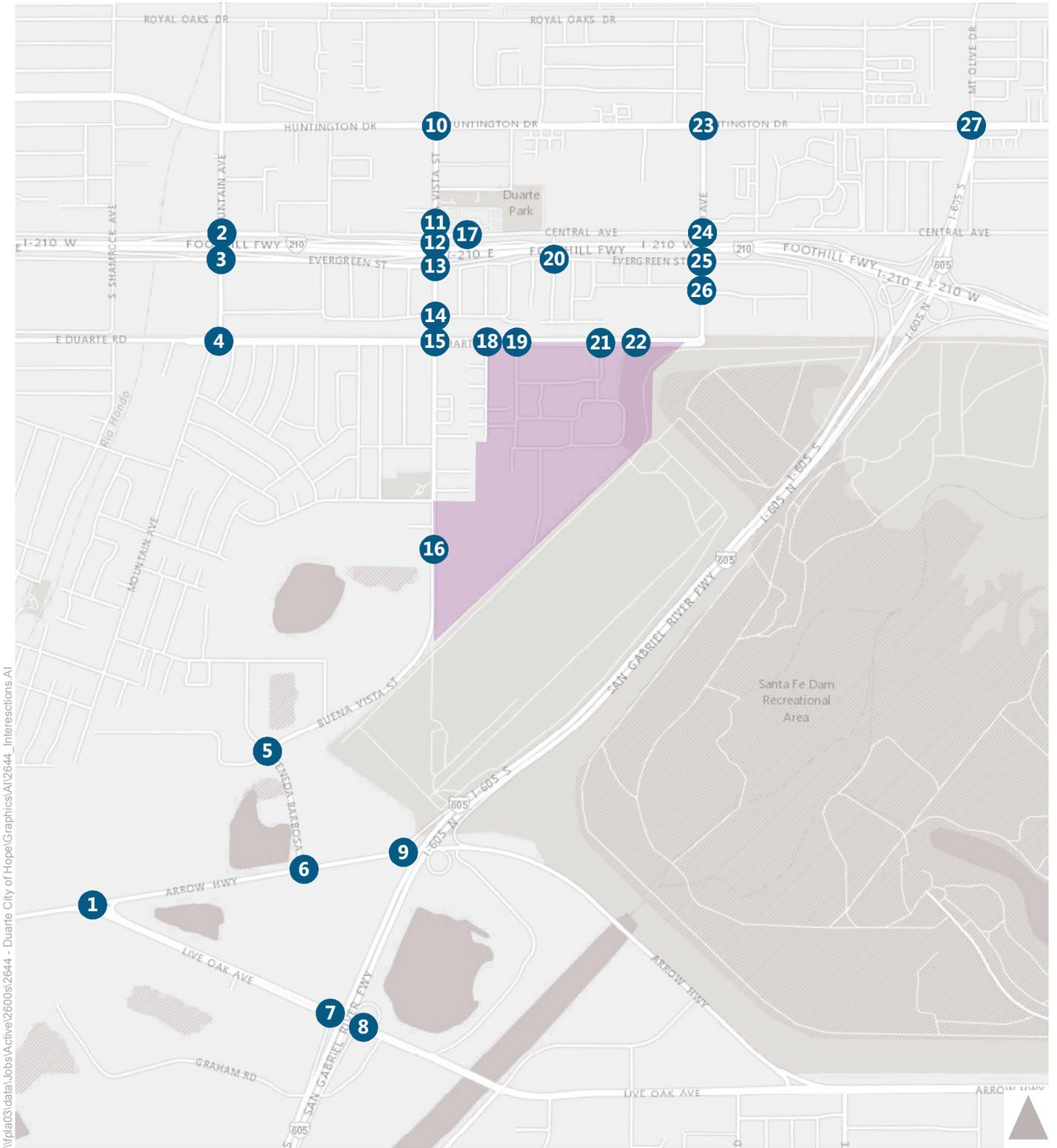
1. INTRODUCTION

This report documents the assumptions, methodologies, and findings of a study conducted by Fehr & Peers to evaluate the potential traffic impacts of the proposed expansion of the City of Hope campus in the City of Duarte and City of Irwindale (Project). The Project site is located at 1500 East Duarte Road and primarily located in the City of Duarte (approximately 89.5 acres), with a smaller portion at its eastern and southern edges located in the City of Irwindale (approximately 26.5 acres). The Project site is bounded by Buena Vista Street, Cinco Robles Drive, and the Duarte Flood Control Channel to the west; the Duarte Road to the north; and the Santa Fe Flood Control Basin to the east and south as shown in Figure 1. The Project will consist of approximately 1,426,000 square feet of new development (approximately 1,038,500 net new square feet following the proposed demolition of approximately 387,500 square feet of existing structures), which would result in up to approximately 2,617,850 gross square feet of developed on the City of Hope campus. This study was conducted as part of an Environmental Impact Review document being prepared for the proposed Project.

PROJECT DESCRIPTION

City of Hope National Medical Center (Project applicant) is seeking approval of the City of Hope Campus Plan, which through a comprehensive Specific Plan, would provide direction for enhancement and developed over a 20-year period of an approximately 116-acre area that contains its existing campus. City of Hope is proposing additions to the existing outpatient (clinic), inpatient (hospital), research, office, industrial, warehouse, and hospitality uses. New parking structures and surface lots are also proposed, as well as internal roadways and open space improvements.

The Specific Plan would contain required elements and encourage conditions that would allow for a broad range of interpretive design solutions intended to guide development over the 20-year period. Ultimately, the vision for the City of Hope campus is to create a walkable and compact campus core that builds on and enhances existing inpatient and outpatient facilities, research, office, assembly, parking, and open spaces uses. In addition the Project proposes to consolidate modular buildings that are currently dispersed throughout the campus, demolish outdated buildings, and construct new floor area within larger development sites that provide flexibility for future build-out of the campus. The proposed Specific Plan would allow flexibility between uses, but for the purpose of this study, the maximum development capacity allowed by the Specific Plan was analyzed in order to provide a conservative estimate of potential impacts from full build out of the Project. Full build-out of the Project will consist of approximately 1,426,000 square feet of new development (approximately 1,038,500 net new square feet following the proposed demolition



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STUDY INTERSECTION

PROJECT SITE



Figure 1
City of Hope Study Intersections

of approximately 387,500 square feet of existing structures), which would result in up to approximately 2,617,850 gross square feet of developed on the City of Hope campus.

As part of the expansion, the Project is expected to increase the hospital population (including inpatients, outpatients, full-time employees, part-time employees, contractors, physicians, and residents). According to City of Hope, the existing average daily population was approximately 6,448 persons during the data collection efforts for the traffic study. Data presented by the City of Hope staff and the *City of Hope Parking Study* (Walker Parking Consultants, June 2016) indicates that the future population is estimated to increase to approximately 9,393 persons. The change in population of 2,945 persons includes increases to patients, employees, physicians, and residents. A plan of the Project site is shown in Figure 2.

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.

TRAFFIC SCENARIOS

The study assumes that the Project build out will take place by 2035 and is directed at analyzing the potential Project generated traffic impact on the local street system for the Project under both existing and future year traffic conditions. The following traffic scenarios have been developed and analyzed as part of this study:

- Existing Conditions – 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.
- Existing plus Project Conditions – 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 proposed Project on existing traffic operating conditions were then identified.
- Future (Year 2035) Conditions – Future traffic projections without the proposed Project were developed for the year 2035. 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 2035.



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Figure 2
Site Plan

- Future (Year 2035) plus Project Conditions – 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 proposed Project on future traffic operating conditions were then identified.

STUDY ANALYSIS LOCATIONS

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

ORGANIZATION OF REPORT

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 proposed Project. Chapter 7 summarizes the California Department of Transportation (Caltrans) analysis. Chapter 8 summarizes the construction impact analysis and Chapter 8 contains the study conclusions. Appendices to this report include details of the technical analysis.

**TABLE 1
STUDY AREA INTERSECTIONS**

ID	N/S Street Name	E/W Street Name	Jurisdiction				Control Type
			City of Duarte	City of Irwindale	City of Monrovia	Caltrans	
1	Live Oak Avenue	Arrow Highway		X			Signalized
2	Mountain Avenue	Central Avenue	X		X		Signalized
3	Mountain Avenue	Evergreen Street	X		X		Signalized
4	Mountain Avenue	Duarte Road	X		X		Signalized
5	Buena Vista Street	Bateman Avenue/Avenida Barbosa		X			Signalized
6	Avenida Barbosa	Arrow Highway		X			Signalized
7	I-605 Southbound On-Ramp	Live Oak Avenue		X		X	Signalized
8	I-605 Northbound Off-Ramp	Live Oak Avenue		X		X	TWSC
9	I-605 Southbound Off-Ramp	Arrow Highway		X		X	Signalized
10	Buena Vista Street	Huntington Drive	X				Signalized
11	Buena Vista Street	Central Avenue	X				Signalized
12	Buena Vista Street	I-210 Westbound On-Ramp	X			X	Signalized
13	Buena Vista Street	Evergreen Street/I-210 Eastbound On-Ramp	X			X	Signalized
14	Buena Vista Street	3 Ranch Road	X				TWSC
15	Buena Vista Street	Duarte Road	X				Signalized
16	Buena Vista Street	Village Road	X				TWSC
17	I-210 Eastbound Off-Ramp	Central Avenue	X			X	TWSC
18	Cinco Robles Drive	Duarte Road	X				TWSC
19	Village Road	Duarte Road	X				TWSC
20	Duncannon Avenue	Evergreen Street	X				AWSC
21	Hope Drive	Duarte Road	X				Signalized
22	Circle Road	Duarte Road	X				TWSC
23	Highland Avenue	Huntington Drive	X				Signalized
24	Highland Avenue	Central Avenue	X				Signalized
25	Highland Avenue	Evergreen Street	X				TWSC
26	Highland Avenue	Business Center Drive	X				Signalized
27	Mt Olive Drive/I-605 Ramps	Huntington Drive	X			X	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 within the City of Duarte on Duarte Road. The Study Area selected for analysis extends to Mountain Avenue to the west, Huntington Drive to the north, I-605 to the east, and Live Oak Avenue to the north. The streets in the Study Area are under the jurisdictions of the City of Duarte, City of Irwindale, and the City of Monrovia. The Study Area also contains the I-210 and 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

The Study Area consists of streets in Duarte, Irwindale, and Monrovia. Major streets serving the Study Area include Huntington Drive, Central Avenue, Duarte Road, and Arrow Highway 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 1/4 mile north and I-605 Freeway about 1/2 mile east and south 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 Buena Vista Street in the Study Area.
- **I-605** runs generally in a north-south direction east and south 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 may be accessed via I-

605 to the south at Arrow Highway and Live Oak Avenue and to the east at the I-210/I-605 interchange. I-605 terminates at Huntington Drive in the City of Duarte.

East – West Streets

- **Huntington Drive** is an arterial street that runs through the northern portion of the Study Area. 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 and access to the I-210 ramps. The corridor allows parking on both sides of the roadway and the posted speed limit is 35 miles per hour.
- **Evergreen Street** is a local 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 35 miles per hour.
- **Business Center Drive** is a local street that runs north of the Project site. The street provides one travel lane in each direction, parking on both sides of the street, and a posted speed limit of 25 miles per hour.
- **Three Ranch Road** is a local street that runs just north 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 north of the Project site. The street provides two travel lanes in each direction with a median and left-turn pockets throughout the corridor. Parking is generally allowed on both sides of the street, except near the Project site where it is restricted to two hours and the posted speed limit is 40 miles per hour.
- **Arrow Highway** is an arterial street that runs in the southern portion of the Study Area. The street provides two or three travel lanes in each direction with a median and left-turn pockets. Parking is generally allowed along the corridor and the posted speed limit is 40 miles per hour.
- **Live Oak Avenue** is an arterial street that runs in the southern portion of the Study Area. The street provides two or three travel lanes in each direction with a median and left-turn pockets. Parking is generally prohibited and the posted speed limit is 45 miles per hour.

North – South Streets

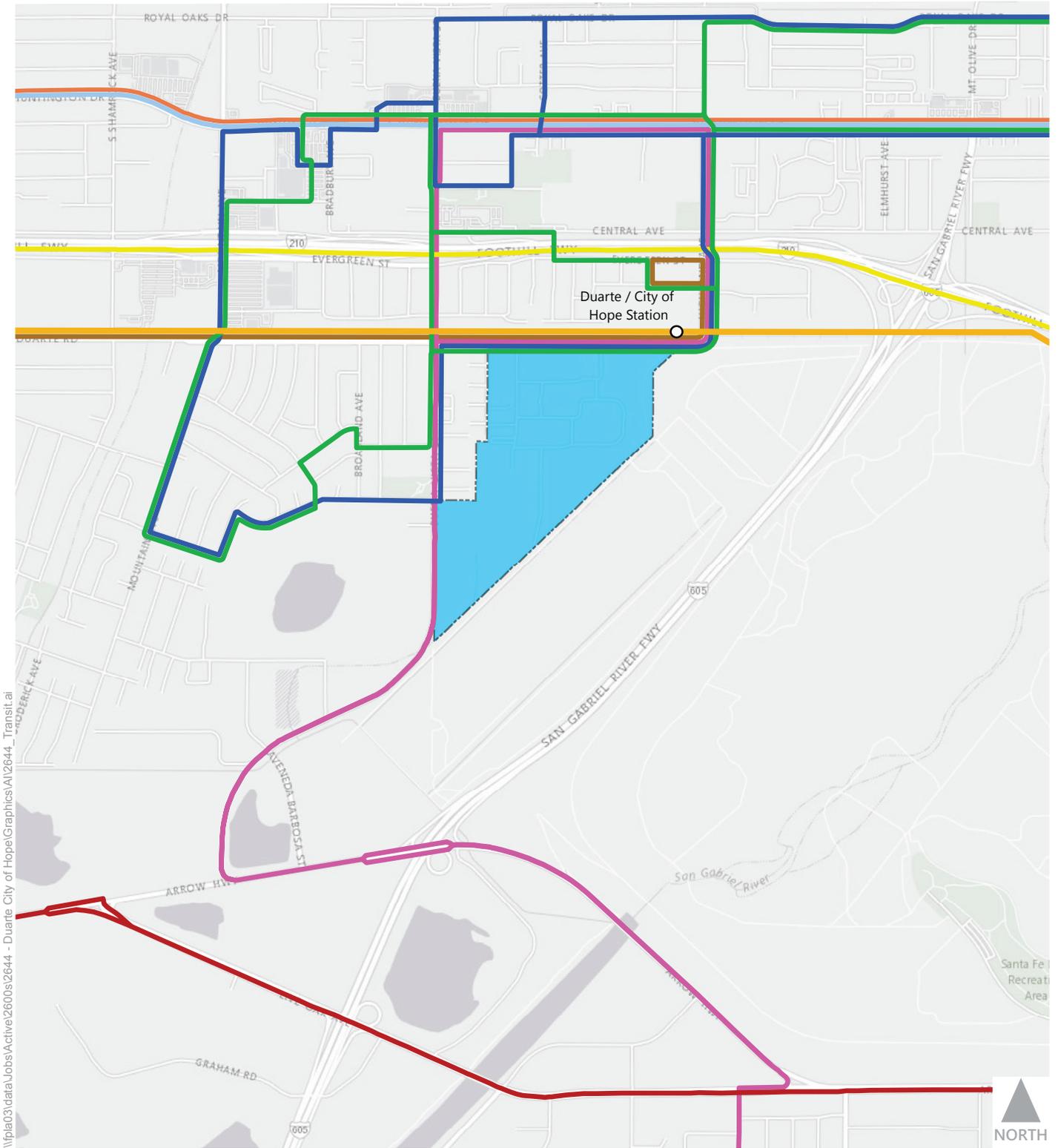
- **Mountain Avenue** is an arterial street that runs in the western portion of the Study Area. The street provides two travel lanes in each direction north of Duarte Road and one travel lane in each direction south of Duarte Road. Mountain has a center turn lane. Parking is generally allowed on both sides of the street and the posted speed limit is 40 miles per hour.
- **Buena Vista** 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 Duarte Road and 3-hour parking limits north of I-210 on both sides of the street. The posted speed limit is 35 miles per hour.
- **Bateman Avenue/Avenida Barbosa** are local streets that run in the southern portion of the Study Area. Bateman provides one travel lane in each direction and allows parking on both sides of the street. Avenida Barbosa provides two travel lanes in each direction and does not allow parking.
- **Cinco Robles Drive** is a local street west of the Project site. The street provides one travel lane in each direction and allows parking on both sides of the street.
- **Village Road** is a private drive that runs through the Project site between Duarte Road and Buena Vista Street and provides access to many of the site's parking lots. The street provides one travel lane in each direction and no parking is allowed.
- **Duncannon Avenue** is a local street that runs north of the Project site. The street provides one travel lane in each direction and parking is allowed on both sides of the street.
- **Hope Drive** is a private drive that runs through the Project site between Duarte Road and Ben Horowitz Drive. The street provides access to the Project parking lots with two travel lanes in the south direction and one travel lane in the north direction and no parking is allowed.
- **Circle Road** is a private driveway that provides access to the site.
- **Highland Avenue** is an arterial street that runs northeast of the Project site. The street provides two travel lanes in each direction and has parking on both sides of the street. 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 A.

TRANSIT LINES

Figure 3 shows the various transit lines providing service in the Project vicinity. Transit lines in the vicinity of the Project site include:

- Metro Gold Line – 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 across Duarte Road north of the Project site). The Gold Line has an average headway of six minutes during the weekday AM and PM peak hours.
- Metro Line 264 – Metro Line 264 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 between Pasadena and Montclair, through Claremont and Glendora. Line 187 has an average headway of 15 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 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 492 – Foothill Transit Line 492 provides service between Montclair and El Monte via Arrow Highway, through El Monte, Arcadia, Baldwin Park, Irwindale, Covina, Azusa, and Claremont. Line 492 has an average headway of 30 minutes during the weekday AM and PM peak hours. Line 492 runs through south 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. The 494 runs 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 16 minutes during the weekday AM and PM peak hours. The 690 runs east to west through the northern edge of the Study Area.
- Duarte Transit Blue Line – 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 16 minutes during the weekday AM and PM peak hours. The 690 runs east to west through the northern edge of the Study Area.



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Duarte Transit

- Blue Line
- Green Line

Foothill Transit

- Line 187
- Line 272
- Line 492

Metro

- Line 494
- Line 690
- Line 264/267
- Metro Gold Line
- Metro Rail Station

■ Project Area



Figure 3
Area Transit Service

- 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 in the northern part of 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 in the northern section of the Study Area.

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Figure 4 shows existing and planned City of Duarte designated bicycles facilities in the Project vicinity. Below is a description of the current Class III bicycle facility and off-street facility in the City of Duarte:

- Royal Oaks Drive – A Class III bike route on Royal Oaks Drive provides a bike route in the northern part of the Study Area, from Sierra Terrace to Buena Vista Street.
- Duarte Bike Trail – The Duarte Bike Trail is an off-street bicycle facility located the northern section of the Study Area.

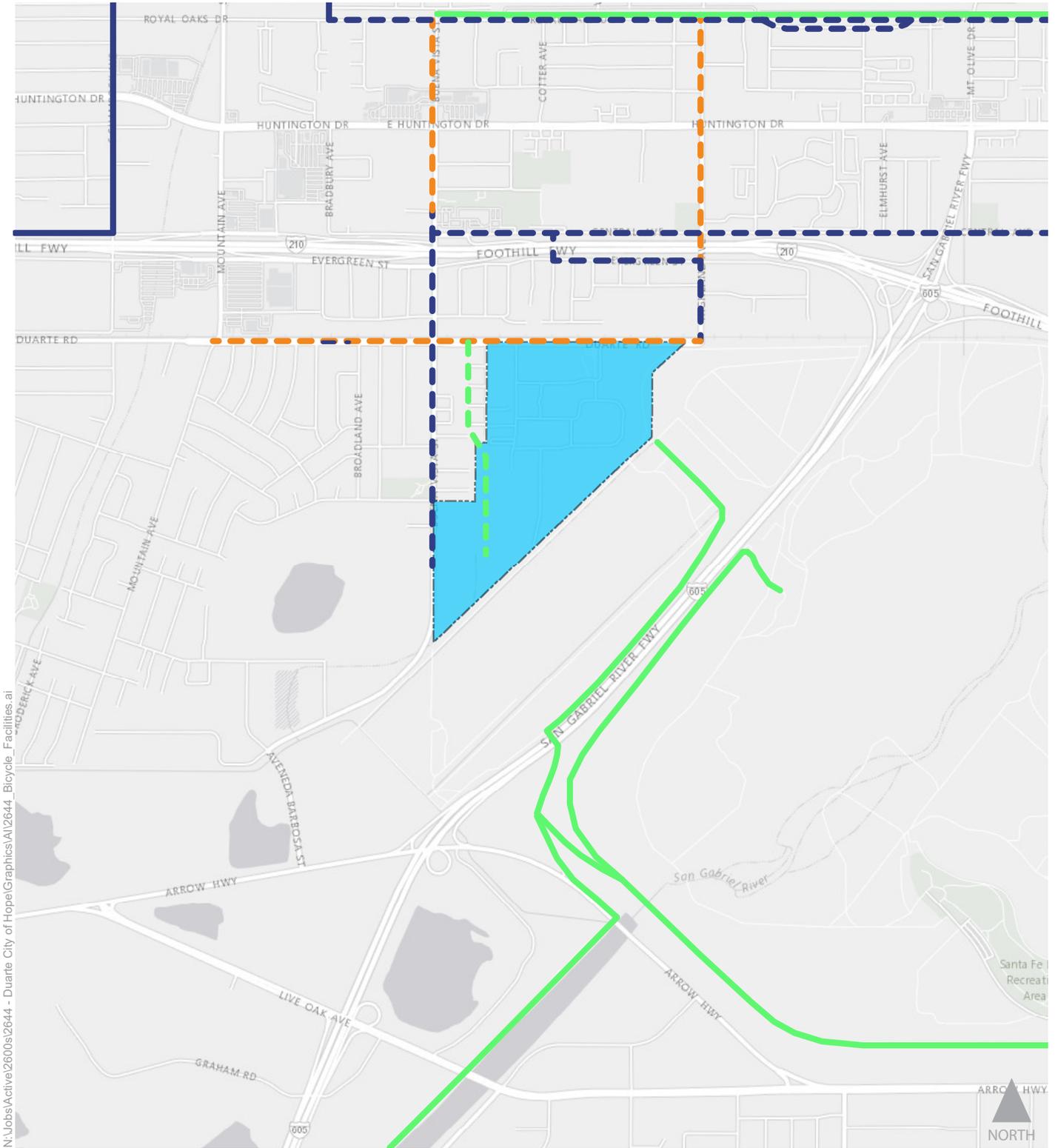
In addition to the existing facilities, the City of Duarte is planning on adding other Class I, Class II, and Class III bicycle facilities in the Project Vicinity.

Pedestrian Facilities

There are pedestrian facilities adjacent to the Project site. Along the western edge of the Project site (Buena Vista Street), sidewalks between nine and 12 feet wide are present on the western and eastern sides of Buena Vista Street.

Sidewalk connections on Duarte Road are incomplete. A 6-foot sidewalk is present on the southern side of Duarte Road between Buena Vista Street and Hope Drive, but this sidewalk on the south side of Duarte ends at Hope Drive. On the northern side of Duarte Road, an approximately 10-foot sidewalk is present between Hope Drive and Highland Avenue.

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



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- | | | |
|-----------------|-----------------|--------------|
| Existing | Proposed | |
| Class I | Class I | Project Area |
| Class II | Class II | |
| Class III | Class III | |



Figure 4
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 6:00 AM) and weekday PM peak period (between 4:00 PM and 6:00 PM) in November 2015. 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 is contained in Appendix B. Existing weekday morning and afternoon peak hour volumes at the study intersections are provided in Appendix C-1.

LEVEL OF SERVICE METHODOLOGY

The methodology utilized to calculate the intersection's LOS depended on the method of control and the city in which the intersection is located. Two different intersection LOS methodologies were used when reviewing the Project's existing traffic conditions and they include: 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 in Table 2. This methodology was used for signalized intersections in the jurisdictions of the City of Duarte, City of Irwindale, and City of Monrovia.

**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 period 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 line 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 2-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 3. This methodology was used for unsignalized intersections in the jurisdiction of the City of Duarte and City of Irwindale.

EXISTING LEVEL OF SERVICE

Existing traffic volumes were analyzed to determine the projected V/C ratios, delay, and LOS for each intersection. Table 4 summarizes the existing weekday peak hour LOS. The following intersections operate at LOS E or worse under existing conditions:

1. Live Oak Avenue & Arrow Highway (AM peak hour)
8. I-605 Northbound Off-Ramp & Live Oak Avenue (both peak hours)
17. I-210 Westbound Off-Ramp & Central Avenue (both peak hours)
19. Village Road & Duarte Road (both peak hours)
25. Highland Avenue & Evergreen Street (AM peak hour)
27. Mt. Olive Drive/I-605 Ramps & Huntington Drive (both peak hours)

Detailed LOS calculations are provided in Appendix D.

TABLE 3
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 4
EXISTING
INTERSECTION LEVELS OF SERVICE**

ID	N/S Street Name	E/W Street Name	Jurisdiction Control Type	Time Period	ICU Methodology		HCM Methodology	
					Existing Conditions		Existing Conditions	
					V/C	LOS	Delay	LOS
1	Live Oak Avenue	Arrow Highway	Irwindale Signalized	AM	1.023	F	-	-
				PM	0.718	C	-	-
2	Mountain Avenue	Central Avenue	Duarte, Monrovia Signalized	AM	0.722	C	-	-
				PM	0.692	B	-	-
3	Mountain Avenue	Evergreen Street	Duarte, Monrovia Signalized	AM	0.609	B	-	-
				PM	0.866	D	-	-
4	Mountain Avenue	Duarte Road	Duarte, Monrovia Signalized	AM	0.500	A	-	-
				PM	0.497	A	-	-
5	Buena Vista Street	Bateman Avenue/ Avenida Barbosa	Irwindale Signalized	AM	0.406	A	-	-
				PM	0.506	A	-	-
6	Avenida Barbosa	Arrow Highway	Irwindale Signalized	AM	0.841	D	-	-
				PM	0.586	A	-	-
7	I-605 Southbound On-Ramp	Live Oak Avenue	Irwindale, Caltrans Signalized	AM	0.528	A	-	-
				PM	0.783	C	-	-
8	I-605 Northbound Off-Ramp	Live Oak Avenue	Irwindale, Caltrans Two-Way Stop Controlled	AM	-	-	221.3	F
				PM	-	-	183.2	F
9	I-605 Southbound Off-Ramp	Arrow Highway	Irwindale, Caltrans Signalized	AM	0.880	D	-	-
				PM	0.507	A	-	-
10	Buena Vista Street	Huntington Drive	Duarte Signalized	AM	0.775	C	-	-
				PM	0.744	C	-	-
11	Buena Vista Street	Central Avenue	Duarte Signalized	AM	0.579	A	-	-
				PM	0.621	B	-	-
12	Buena Vista Street	I-210 Westbound On-Ramp	Duarte, Caltrans Signalized	AM	0.397	A	-	-
				PM	0.550	A	-	-
13	Buena Vista Street	Evergreen Street/ I-210 Eastbound On-Ramp	Duarte, Caltrans Signalized	AM	0.537	A	-	-
				PM	0.679	B	-	-
14	Buena Vista Street	3 Ranch Road	Duarte Two-Way Stop Controlled	AM	-	-	15.1	C
				PM	-	-	23.1	C
15	Buena Vista Street	Duarte Road	Duarte Signalized	AM	0.664	B	-	-
				PM	0.731	C	-	-
16	Buena Vista Street	Village Road	Duarte Two-Way Stop Controlled	AM	-	-	18.3	C
				PM	-	-	22.3	C
17	I-210 Westbound Off-Ramp	Central Avenue	Duarte, Caltrans Two-Way Stop Controlled	AM	-	-	194.9	F
				PM	-	-	105.4	F
18	Cinco Robles Drive	Duarte Road	Duarte Two-Way Stop Controlled	AM	-	-	22.0	C
				PM	-	-	20.9	C
19	Village Road	Duarte Road	Duarte Two-Way Stop Controlled	AM	-	-	37.5	E
				PM	-	-	46.5	E
20	Duncannon Avenue	Evergreen Street	Duarte All-Way Stop Controlled	AM	-	-	7.8	A
				PM	-	-	7.3	A
21	Hope Drive	Duarte Road	Duarte Signalized	AM	0.327	A	-	-
				PM	0.381	A	-	-
22	Circle Road	Duarte Road	Duarte Two-Way Stop Controlled	AM	-	-	14.8	B
				PM	-	-	20.6	C
23	Highland Avenue	Huntington Drive	Duarte Signalized	AM	0.694	B	-	-
				PM	0.647	B	-	-
24	Highland Avenue	Central Avenue	Duarte Signalized	AM	0.713	C	-	-
				PM	0.750	C	-	-
25	Highland Avenue	Evergreen Street	Duarte Two-Way Stop Controlled	AM	-	-	40.2	E
				PM	-	-	16.8	C
26	Highland Avenue	Business Center Drive	Duarte Signalized	AM	0.353	A	-	-
				PM	0.364	A	-	-
27	Mt Olive Drive/I-605 Ramps	Huntington Drive	Duarte, Caltrans Signalized	AM	0.968	E	-	-
				PM	1.024	F	-	-

3. TRAFFIC PROJECTIONS

PROJECT TRAFFIC

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

PROJECT TRIP GENERATION

As discussed in Chapter 1, the proposed Project would include approximately 1,017,000 net new square feet of development while the population is expected to increase by 2,945 persons. City of Hope is a unique hospital in that it does not provide the same type of services that may be found at other local or regional serving hospitals, such as general care, emergency care, maternity care, etc. Factors such as the number of physicians, total employees, and number of patients at the City of Hope are more direct indicators of trip generation of the campus. Therefore, projected increases in total population were used to calculate trip generation for the Project.

Existing Trip Generation

Driveway counts were conducted for a 24-hour period at the five City of Hope campus driveways on a Tuesday, Wednesday, and Thursday in November 2015 (November 17, 2016 to November 19, 2015). The AM and PM peak hours were determined for the entire site for each day counted. The AM and PM peak hours for each day were averaged to determine the AM and PM peak hour trip generation for the existing City of Hope campus.

The driveway counts indicate that the City of Hope campus generates 11,929 daily trips, 1,290 trips (1,122 inbound/168 outbound) during the AM peak hour, and 1,161 trips (186 inbound/975 outbound) during the PM peak hour. The daily population at the time of the driveway counts (including inpatients, outpatients, full-time employees, part-time employees, contractors, physicians, and residents) was provided by City of Hope for each of the count days. The average daily population of the City of Hope campus was determined to be approximately 6,448 persons. The resulting population translates into a vehicle trip generation rate of 1.85 daily trips per person, 0.20 AM peak hour trips per person (87% inbound/13% outbound), and 0.18 PM peak hour trips per person (16% inbound/84% outbound).

The determined trip generation accounts for the existing modal split of the City of Hope campus, and all transportation demand management programs currently enacted by City of Hope. These programs include subsidized transit passes, shuttles to and from Baldwin Park, designated carpool parking spaces, incentive

programs, carpool matching, subsidized vanpools, and a Guaranteed Ride Home Program for carpoolers and van poolers.

Project Trip Generation

The trip generation rate of the existing City of Hope campus was utilized to determine the net new trips generated by the full build-out of the Project. According to City of Hope staff and the *City of Hope Parking Study* (Walker Parking Consultants, June 2016) the future daily population of the City of Hope campus at full build-out of the Project is estimated to be 9,393 persons. It was assumed that the existing modal splits and transportation demand programs will be similar for the proposed Project. However, it is assumed that City of Hope could expect an increase in public transit ridership in the future due to an increase in connectivity with a larger service area in the future. The driveway counts used to establish the existing trip generation were conducted prior to the opening of the Gold Line Extension from Pasadena to Azusa on March 5, 2016. The Duarte/City of Hope Gold Line Station is located approximately 300 feet from the City of Hope campus. The opening of the Gold Line Extension and subsequent Exposition Line Extension to Santa Monica has increased the Los Angeles Metro service area as compared to what was being served prior.

A 4% transit credit was applied to the Project trip generation to account for increased transit usage over current public transportation use at City of Hope. The 4% estimate is based on the percentage of employees who live in a zip code within one mile of a Metro rail station. No other credits were applied to the Project as any applicable credits were already accounted for in the development of the existing trip generation rate.

The City of Hope campus population is estimated to increase by 2,945 persons at the full build-out of the Project. As presented in Table 5, the Project is expected to generate an estimated net external 4,753 daily trips, including 514 trips (448 inbound/66 outbound) during the AM peak hour and 462 trips (74 inbound/388 outbound) during the PM peak hour.

PROJECT TRAFFIC DISTRIBUTION

The geographic distribution of trips generated by the proposed Project is dependent on characteristics of the street system serving the Project site, the level of accessibility of routes to and from the proposed Project site, and the locations residential areas to which population of the Project would be drawn.

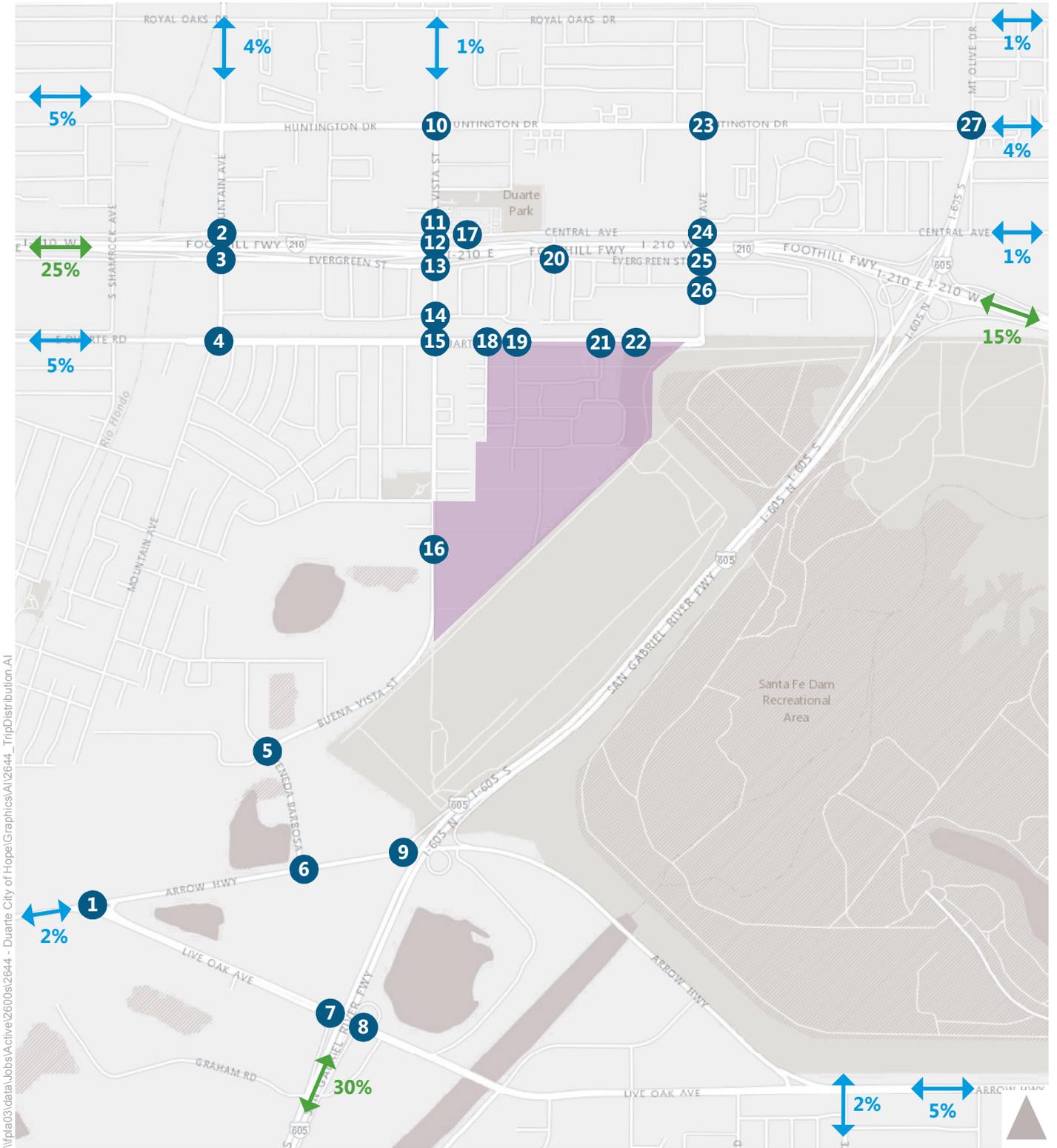
Trip distribution estimates were based on anonymous cell phone data from the existing City of Hope campus for one year from July 2014 to June 2015. The anonymous cell phone data estimates and aggregates the home zip code data into probability distributions. These distributions are used to develop the distribution of project traffic to the City of Hope campus. Although the data included cell phone records for trip origins and destinations on weekdays and weekend days throughout the southern California (and beyond), this effort focused specifically on trip origins and destinations for weekdays.



Trip distribution estimates to the freeways included approximately 30% via I-605, 15% via I-210 to/from the east, and 25% via I-210 to/from the west. The ramp distribution estimates include approximately 16% at Live Oak Avenue, approximately 9% at Huntington Drive, approximately 20% at Central Avenue, and approximately 25% at Evergreen Street. The distribution of Project trips is illustrated in Figure 5.

**TABLE 5
CITY OF HOPE
TRIP GENERATION ESTIMATE**

Land Use	Unit	Trip Generation Rate							Estimated Trip Generation								
		Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips			Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips				
			Total	In	Out	Total	In	Out		In	Out	Total	In	Out	Total		
Future Build Out Year 2035																	
City of Hope (Population)	9393 persons	1.85	0.20	87%	13%	0.18	16%	84%	17,377	1,635	244	1,879	271	1,420	1,691		
Transit Credit [a]		4%	4%			4%			-695	-65	-10	-75	-11	-57	-68		
Net External City of Hope									16,682	1570	234	1804	260	1363	1623		
Existing Year 2015																	
City of Hope (Population)	6448 persons	1.85	0.20	87%	13%	0.18	16%	84%	11,929	1,122	168	1,290	186	975	1,161		
Net Incremental Trips									4,753	448	66	514	74	388	462		



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- # STUDY INTERSECTION
- STREET TRIP DISTRIBUTION
- PROJECT SITE
- HIGHWAY TRIP DISTRIBUTION



Figure 5
Trip Distribution

PROJECT TRAFFIC ASSIGNMENT

The traffic to be generated by the proposed Project was assigned to the street network using the distribution pattern shown in Figure 5. Appendix C-2 shows assignment of the proposed Project-generated peak hour traffic volumes at the analyzed intersections during the AM and PM peak hours.

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

The estimated Project traffic was added to the existing traffic volumes to estimate Existing plus Project traffic volumes. Appendix C-3 shows turning movement traffic volumes for the Existing plus Project scenario.

FUTURE TRAFFIC CONDITIONS

To evaluate the potential impacts of the proposed Project on future buildout (Year 2035) 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 (related projects). These projected traffic volumes, identified herein as the future conditions, represent the future study year conditions without the proposed Project. The traffic generated by the proposed 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.

FUTURE TRAFFIC CONDITIONS

The traffic volumes projected for the future scenario (Year 2035) take into account the expected changes in traffic over existing conditions from two primary sources: ambient growth in the existing traffic volumes due to the effects of overall regional growth and development outside the study area, and 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.

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 area of Duarte was used to determine yearly growth rates of the future traffic. Growth rates of 0.52% per year for the Duarte RSA was used for the development of the future year scenario.

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, City of Monrovia, City of Irwindale, City of Bradbury, City of Azusa, and County of Los Angeles. A total of 13 cumulative projects were identified in the study area; these projects are listed in Table 6 and illustrated in Figure 6.

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, 9th Edition* (Institute of Transportation Engineers [ITE], 2012). Table 6 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.

**TABLE 6
TRIP GENERATION ESTIMATES FOR RELATED PROJECTS**

Project #	Location	Jurisdiction	Size	Unit	Description	Estimated Trip Generation [a]						
						Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
							In	Out	Total	In	Out	Total
1	Northeast Corner - Huntington Drive & Buena Vista Street	Duarte	1.80	ksf	Drive-thru Coffee Shop	1,584	12	9	21	44	43	87
			2.60	ksf	Retail							
2	Metro Gold Line Duarte Station Parking Facility Project [c]	Duarte	-	-	Transit Parking	893	215	53	268	180	130	310
3	Southeast Corner - Huntington Drive & Buena Vista Street	Duarte	19.93	ksf	Supermarket	2,038	42	26	68	96	93	189
4	800 Block of Buena Vista Street [b]	Duarte	191.00	beds	Assisted Living	411	3	2	5	19	10	29
5	Northwest Corner - Highland Avenue & Duarte Road [c]	Duarte	475.00	du	Apartment	7,259	499	275	774	293	449	742
			400.00	ksf	Office							
			250.00	rm	Hotel							
			12.00	ksf	Retail							
6	1200 Block Huntington Drive	Duarte	800.00	du	Residential Unit	3,150	157	158	315	1,729	1,690	916
			703.00	ksf	Commercial							
			450.00	rm	Lodging							
7	1634 Third Street & 1101 Oak Avenue	Duarte	18.00	du	Townhouse	106	4	9	13	8	5	13
			0.00	ksf	Park							
8	2200 Arrow Hwy [d]	Irwindale	-	-	General Light Industrial	8,333	350	314	664	336	328	664
9	Arrow Hwy & Live Oak Lane [d]	Irwindale	17.00	ac	Athletic Club	710	15	13	28	40	40	80
10	Live Oak Lane [d]	Irwindale	29.00	ksf	Retail	1,202	17	11	28	34	38	72
11	500 Speedway Drive [d]	Irwindale	700.00	ksf	Factory Outlet Center	17,788	342	127	469	341	438	779
12	Station Square Transit Village [e]	Monrovia	23.00	ksf	Retail	4,513	262	231	493	194	256	450
			450.00	ksf	Office							
			700.00	du	Residential							
13	Miguel Miranda Avenue & Meridian Street	Azusa				1,610	105	100	205	100	105	205
Total						49,597	2,023	1,327	3,351	3,414	3,625	4,536

Notes:

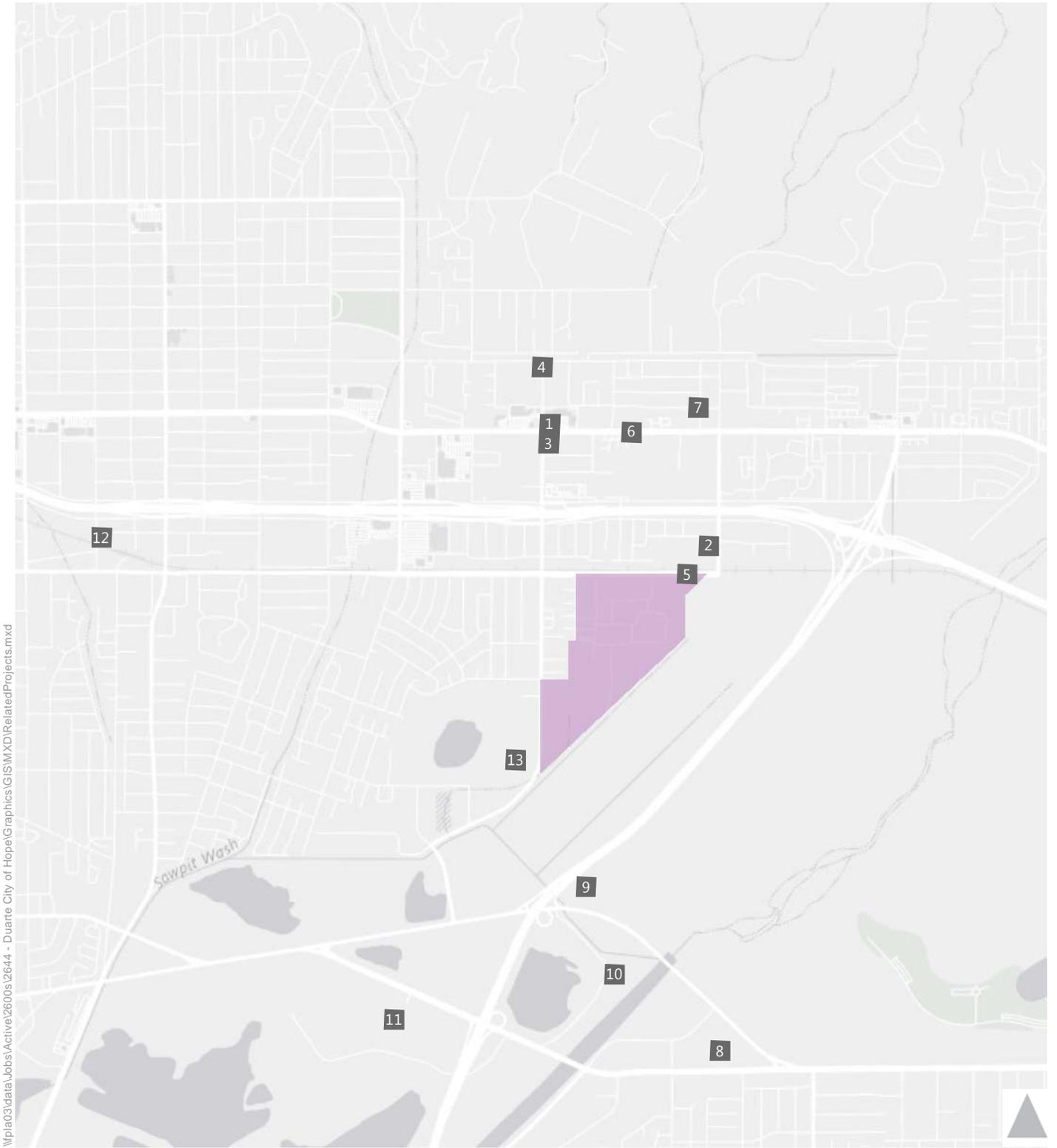
[a]: Trip generation estimates developed using ITE Trip Generation, 9th Edition, 2012 unless otherwise noted.

[b]: Trip Trip generation estimates provided in The Rose Gardens at Santa Teresita Master Plan Program Environmental Impact Report, March 2011.

[c]: Trip Trip generation estimates provided in Duarte Station Specific Plan Environmental Impact Report, September 2013.

[d]: Trip Trip generation estimates provided in Traffic Impact Analysis Irwindale Regional Shopping Center, November 2014.

[e]: Trip Trip generation estimates provided in Traffic Study for the Initial Phase of the Station Square Transit Village Mixed-Use Development, November 2008.



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■ RELATED PROJECT

■ PROJECT SITE



Figure 6
Location of Related Projects



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.

CUMULATIVE BASE TRAFFIC VOLUMES

Appendix C-4 illustrates the future year 2035 weekday AM and PM peak hour traffic volumes for the analyzed intersections. The future traffic conditions represent an estimate of future conditions without the proposed Project.

FUTURE PLUS PROJECT TRAFFIC PROJECTIONS

The proposed Project traffic volumes were added to the year 2035 future traffic projections, resulting in Future plus Project AM and PM peak hour traffic volumes. Illustrated in Appendix C-5, 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 proposed Project. This provides the information needed to assess the potential impact of the Project using significance criteria established by the City of Duarte and City of Irwindale.

CRITERIA FOR DETERMINATION OF SIGNIFICANT TRAFFIC IMPACT

The 27 study intersections are located within the City of Duarte, City of Irwindale, and City of Monrovia. Significance criteria established by the City of Duarte were used to assess the potential for significant Project impacts at the intersections in the city of Duarte. Significance criteria established by the City of Irwindale were used to assess the potential for significant Project impacts at the intersections in the city of Irwindale.

CITY OF DUARTE

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:

- 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.

CITY OF IRWINDALE

Signalized Intersections

The City of Irwindale utilizes the following criteria threshold to assess significant transportation impacts at signalized intersections in Irwindale:

- When a signalized intersection operates at a LOS D or better ($V/C \leq 0.900$) under the existing or future baseline conditions and the addition of the project trips worsens the intersection operations to LOS E or F ($V/C > 0.900$)
- When a signalized intersection operates at a LOS E or better ($V/C \leq 1.000$) under the existing or future baseline conditions and the addition of the project trips worsens the intersection operations to LOS F ($V/C > 1.000$) or increases the V/C ratio by 0.02 or greater
- When a signalized intersection operates at a LOS F ($V/C > 1.000$) under the existing or future baseline conditions and the addition of more than 50 peak-hour project trips increase the V/C ratio by 0.02 or greater

Unsignalized Intersections

The following thresholds of significance for the incremental increase in delay was used to assess significant transportation impacts at the unsignalized intersections in the City of Irwindale. The significance of the Project’s incremental increase in delay is dependent upon the underlying LOS value for that specific peak hour based on the following threshold:

- When the minor stop-controlled approach operates at LOS F and does not have acceptable operation in terms of total control delay, and the addition of project trips increases the total control delay to more than 4.0 seconds per vehicles for a single lane approach or 5.0 seconds per vehicle for a multilane approaches
- When the minor stop-controlled approach operates at LOS F and does not have acceptable operation in terms of total control delay, and the addition of more than 50 peak hour project trips contributes to the operational failure at the minor approach

CITY OF MONROVIA

Signalized Intersections

The following Los Angeles County 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 Monrovia. 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:

Pre-project		Project Related Increase in V/C
LOS	Final V/C Ratio	
C	0.71 to 0.80	> 0.04
D	0.81 to 0.90	> 0.02
E or F	> 0.91	> 0.01

EXISTING PLUS PROJECT IMPACT ANALYSIS

EXISTING PLUS PROJECT TRAFFIC LEVEL OF SERVICE

Existing plus Project traffic volumes, presented in Appendix C-3, were analyzed to determine the projected V/C ratio or delay, and LOS for each study intersection. Table 7 summarizes the Existing plus Project LOS. The following seven study intersections analyzed operate at LOS E or worse during one or both peak hours under this scenario:

1. Live Oak Avenue & Arrow Highway (AM peak hour)
8. I-605 Northbound Off-Ramp & Live Oak Avenue (both peak hours)
14. Buena Vista Street & 3 Ranch Road (PM peak hour)
17. I-210 Westbound Off-Ramp & Central Avenue (both peak hours)
19. Village Road & Duarte Road (both peak hours)
25. Highland Avenue & Evergreen Street (AM peak hour)
27. Mt. Olive Drive/I-605 Ramps & Huntington Drive (both peak hours)

EXISTING PLUS PROJECT INTERSECTION IMPACTS

As presented in Table 7, after applying the aforementioned significant impact criteria, it was determined that the proposed Project would significantly impact traffic at the following two study intersections under the Existing plus Project scenario:

8. I-605 Northbound Off-Ramp & Live Oak Avenue (AM peak hour, City of Irwindale)
19. Village Road & Duarte Road (both peak hours, City of Duarte)

**TABLE 7
EXISTING PLUS PROJECT
INTERSECTION LEVELS OF SERVICE**

ID	N/S Street Name	E/W Street Name	Jurisdiction Control Type	Time Period	ICU Methodology						HCM Methodology					
					Existing Conditions		Existing Plus Project		Change in V/C	Significant Impact	Existing Conditions		Existing Plus Project		Change in Delay	Significant Impact
					V/C	LOS	V/C	LOS			Delay	LOS	Delay	LOS		
1	Live Oak Avenue	Arrow Highway	Irwindale Signalized	AM PM	1.023 0.718	F C	1.023 0.741	F C	0.000 0.023	NO NO	- -	- -	- -	- -	- -	- -
2	Mountain Avenue	Central Avenue	Duarte, Monrovia Signalized	AM PM	0.722 0.692	C B	0.728 0.692	C B	0.006 0.000	NO NO	- -	- -	- -	- -	- -	- -
3	Mountain Avenue	Evergreen Street	Duarte, Monrovia Signalized	AM PM	0.609 0.866	B D	0.610 0.871	B D	0.001 0.005	NO NO	- -	- -	- -	- -	- -	- -
4	Mountain Avenue	Duarte Road	Duarte, Monrovia Signalized	AM PM	0.500 0.497	A A	0.513 0.503	A A	0.013 0.006	NO NO	- -	- -	- -	- -	- -	- -
5	Buena Vista Street	Bateman Avenue/ Avenida Barbosa	Irwindale Signalized	AM PM	0.406 0.506	A A	0.412 0.541	A A	0.006 0.035	NO NO	- -	- -	- -	- -	- -	- -
6	Avenida Barbosa	Arrow Highway	Irwindale Signalized	AM PM	0.841 0.586	D A	0.894 0.608	D B	0.053 0.022	NO NO	- -	- -	- -	- -	- -	- -
7	I-605 Southbound On-Ramp	Live Oak Avenue	Irwindale, Caltrans Signalized	AM PM	0.528 0.783	A C	0.528 0.783	A C	0.000 0.000	NO NO	- -	- -	- -	- -	- -	- -
8	I-605 Northbound Off-Ramp	Live Oak Avenue	Irwindale, Caltrans Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	221.3 183.2	F F	307.9 183.2	F F	86.6 0.0	YES NO
9	I-605 Southbound Off-Ramp	Arrow Highway	Irwindale, Caltrans Signalized	AM PM	0.880 0.507	D A	0.890 0.513	D A	0.010 0.006	NO NO	- -	- -	- -	- -	- -	- -
10	Buena Vista Street	Huntington Drive	Duarte Signalized	AM PM	0.775 0.744	C C	0.779 0.758	C C	0.004 0.014	NO NO	- -	- -	- -	- -	- -	- -
11	Buena Vista Street	Central Avenue	Duarte Signalized	AM PM	0.579 0.621	A B	0.626 0.638	B B	0.047 0.017	NO NO	- -	- -	- -	- -	- -	- -
12	Buena Vista Street	I-210 Westbound On-Ramp	Irwindale, Caltrans Signalized	AM PM	0.397 0.550	A A	0.444 0.618	A B	0.047 0.068	NO NO	- -	- -	- -	- -	- -	- -
13	Buena Vista Street	Evergreen Street/ I-210 Eastbound On-Ramp	Duarte, Caltrans Signalized	AM PM	0.537 0.679	A B	0.613 0.739	B C	0.076 0.060	NO NO	- -	- -	- -	- -	- -	- -
14	Buena Vista Street	3 Ranch Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	15.1 23.1	C C	19.5 35.1	C E	4.4 12.0	NO NO
15	Buena Vista Street	Duarte Road	Duarte Signalized	AM PM	0.664 0.731	B C	0.783 0.852	C D	0.119 0.121	NO NO	- -	- -	- -	- -	- -	- -
16	Buena Vista Street	Village Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	18.3 22.3	C C	33.3 33.8	D D	15.0 11.5	NO NO
17	I-210 Westbound Off-Ramp	Central Avenue	Duarte, Caltrans Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	194.9 105.4	F F	330.3 118.5	F F	135.4 13.1	NO NO
18	Cinco Robles Drive	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	22.0 20.9	C C	32.9 25.9	D D	10.9 5.0	NO NO
19	Village Road	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	37.5 46.5	E E	130.8 252.1	F F	93.3 205.6	YES YES
20	Duncannon Avenue	Evergreen Street	Duarte All-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	7.8 7.3	A A	7.8 7.3	A A	0.0 0.0	NO NO
21	Hope Drive	Duarte Road	Duarte Signalized	AM PM	0.327 0.381	A A	0.386 0.445	A A	0.059 0.064	NO NO	- -	- -	- -	- -	- -	- -
22	Circle Road	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	14.8 20.6	B C	18.7 29.6	C D	3.9 9.0	NO NO
23	Highland Avenue	Huntington Drive	Duarte Signalized	AM PM	0.694 0.647	B B	0.697 0.674	B B	0.003 0.027	NO NO	- -	- -	- -	- -	- -	- -
24	Highland Avenue	Central Avenue	Duarte Signalized	AM PM	0.713 0.750	C C	0.723 0.756	C C	0.010 0.006	NO NO	- -	- -	- -	- -	- -	- -
25	Highland Avenue	Evergreen Street	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	40.2 16.8	E C	49.8 17.7	E C	9.6 0.9	NO NO
26	Highland Avenue	Business Center Drive	Duarte Signalized	AM PM	0.353 0.364	A A	0.373 0.378	A A	0.020 0.014	NO NO	- -	- -	- -	- -	- -	- -
27	Mt Olive Drive/I-605 Ramps	Huntington Drive	Duarte, Caltrans Signalized	AM PM	0.968 1.024	E F	0.987 1.040	E F	0.019 0.016	NO NO	- -	- -	- -	- -	- -	- -

FUTURE PLUS PROJECT IMPACT ANALYSIS

FUTURE TRAFFIC CONDITIONS

The year 2035 future peak hour traffic volumes were analyzed to determine the projected V/C ratio or delay, and LOS for each study intersection. Table 8 summarizes the Future plus Project LOS. The following 17 study intersections analyzed operate at LOS E or worse during one or both peak hours under this scenario:

1. Live Oak Avenue & Arrow Highway (AM peak hour)
3. Mountain Avenue & Evergreen Street (PM peak hour)
6. Avenida Barbosa & Arrow Highway (AM peak hour)
7. I-605 Southbound On-Ramp & Live Oak Avenue (PM peak hour)
8. I-605 Northbound Off-Ramp & Live Oak Avenue (both peak hours)
9. I-605 Southbound Off-Ramp & Arrow Highway (AM peak hour)
10. Buena Vista Street & Huntington Drive (PM peak hour)
13. Buena Vista Street & Evergreen Street (PM peak hour)
14. Buena Vista Street & Three Ranch Road (PM peak hour)
15. Buena Vista Street & Duarte Road (both peak hours)
16. Buena Vista Street & Village Road (PM peak hour)
17. I-210 Westbound Off-Ramp & Central Avenue (both peak hours)
18. Cinco Robles Drive & Duarte Road (both peak hours)
19. Village Road & Duarte Road (both peak hours)
22. Circle Road & Duarte Road (PM peak hour)
25. Highland Avenue & Evergreen Street (AM peak hour)
27. Mt. Olive Drive/I-605 Ramps & Huntington Drive (both peak hours)

**TABLE 8
FUTURE PLUS PROJECT
INTERSECTION LEVELS OF SERVICE**

ID	N/S Street Name	E/W Street Name	Jurisdiction Control Type	Time Period	ICU Methodology						HCM Methodology					
					Future Conditions		Future Plus Project		Change in V/C	Significant Impact	Future Conditions		Future Plus Project		Change in Delay	Significant Impact
					V/C	LOS	V/C	LOS			Delay	LOS	Delay	LOS		
1	Live Oak Avenue	Arrow Highway	Irwindale Signalized	AM PM	1.158 0.900	F D	1.158 0.923	F E	0.000 0.023	NO YES	- -	- -	- -	- -	- -	- -
2	Mountain Avenue	Central Avenue	Duarte, Monrovia Signalized	AM PM	0.796 0.757	C C	0.801 0.758	D C	0.005 0.001	NO NO	- -	- -	- -	- -	- -	- -
3	Mountain Avenue	Evergreen Street	Duarte, Monrovia Signalized	AM PM	0.666 0.973	B E	0.667 0.978	B E	0.001 0.005	NO NO	- -	- -	- -	- -	- -	- -
4	Mountain Avenue	Duarte Road	Duarte, Monrovia Signalized	AM PM	0.735 0.728	C C	0.754 0.734	C C	0.019 0.006	NO NO	- -	- -	- -	- -	- -	- -
5	Buena Vista Street	Bateman Avenue/ Avenida Barbosa	Irwindale Signalized	AM PM	0.482 0.602	A B	0.488 0.637	A B	0.006 0.035	NO NO	- -	- -	- -	- -	- -	- -
6	Avenida Barbosa	Arrow Highway	Irwindale Signalized	AM PM	1.064 0.823	F D	1.118 0.842	F D	0.054 0.019	YES NO	- -	- -	- -	- -	- -	- -
7	I-605 Southbound On-Ramp	Live Oak Avenue	Irwindale, Caltrans Signalized	AM PM	0.630 0.932	B E	0.630 0.932	B E	0.000 0.000	NO NO	- -	- -	- -	- -	- -	- -
8	I-605 Northbound Off-Ramp	Live Oak Avenue	Irwindale, Caltrans Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	695.4 473.2	F F	807.2 487.3	F F	111.8 14.1	YES YES
9	I-605 Southbound Off-Ramp	Arrow Highway	Irwindale, Caltrans Signalized	AM PM	1.101 0.744	F C	1.110 0.750	F C	0.009 0.006	NO NO	- -	- -	- -	- -	- -	- -
10	Buena Vista Street	Huntington Drive	Duarte Signalized	AM PM	0.867 1.019	D F	0.871 1.023	D F	0.004 0.004	NO NO	- -	- -	- -	- -	- -	- -
11	Buena Vista Street	Central Avenue	Duarte Signalized	AM PM	0.646 0.754	B C	0.694 0.771	B C	0.048 0.017	NO NO	- -	- -	- -	- -	- -	- -
12	Buena Vista Street	I-210 Westbound On-Ramp	Duarte, Caltrans Signalized	AM PM	0.506 0.717	A C	0.553 0.786	A C	0.047 0.069	NO NO	- -	- -	- -	- -	- -	- -
13	Buena Vista Street	Evergreen Street/ I-210 Eastbound On-Ramp	Duarte Signalized	AM PM	0.728 0.910	C E	0.808 0.970	D E	0.080 0.060	NO YES	- -	- -	- -	- -	- -	- -
14	Buena Vista Street	3 Ranch Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	25.1 38.6	D E	37.6 217.6	E F	12.5 179.0	NO NO
15	Buena Vista Street	Duarte Road	Duarte Signalized	AM PM	1.168 1.435	F F	1.345 1.615	F F	0.177 0.180	YES YES	- -	- -	- -	- -	- -	- -
16	Buena Vista Street	Village Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	23.2 41.7	C E	47.7 89.1	E F	24.5 47.4	NO YES
17	I-210 Westbound Off-Ramp	Central Avenue	Duarte, Caltrans Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	410.5 366.2	F F	584.9 388.4	F F	174.4 22.2	YES YES
18	Cinco Robles Drive	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	56.1 45.6	F E	106.5 61.3	F F	50.4 15.7	NO NO
19	Village Road	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	220.9 461.3	F F	1054.9 1149.5	F F	834.0 688.2	YES YES
20	Duncannon Avenue	Evergreen Street	Duarte All-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	8.0 7.7	A A	8.0 7.7	A A	0.0 0.0	NO NO
21	Hope Drive	Duarte Road	Duarte Signalized	AM PM	0.450 0.480	A A	0.509 0.544	A A	0.059 0.064	NO NO	- -	- -	- -	- -	- -	- -
22	Circle Road	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	30.0 104.6	D F	46.3 225.5	E F	16.3 120.9	YES YES
23	Highland Avenue	Huntington Drive	Duarte Signalized	AM PM	0.819 0.834	D D	0.824 0.861	D D	0.005 0.027	NO NO	- -	- -	- -	- -	- -	- -
24	Highland Avenue	Central Avenue	Duarte Signalized	AM PM	0.847 0.873	D D	0.856 0.878	D D	0.009 0.005	NO NO	- -	- -	- -	- -	- -	- -
25	Highland Avenue	Evergreen Street	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	534.1 22.3	F C	801.4 23.8	F C	267.3 1.5	NO NO
26	Highland Avenue	Business Center Drive	Duarte Signalized	AM PM	0.763 0.599	C A	0.784 0.600	C A	0.021 0.001	NO NO	- -	- -	- -	- -	- -	- -
27	Mt Olive Drive/I-605 Ramps	Huntington Drive	Duarte, Caltrans Signalized	AM PM	1.133 1.187	F F	1.151 1.203	F F	0.018 0.016	NO NO	- -	- -	- -	- -	- -	- -

FUTURE PLUS PROJECT TRAFFIC CONDITIONS

The resulting Future plus Project peak hour traffic volumes, illustrated in Appendix C-5, were analyzed to determine the projected future operating conditions with the addition of the proposed Project traffic. The results of the Future plus Project analysis are presented in Table 8. The following 17 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. Live Oak Avenue & Arrow Highway (both peak hours)
3. Mountain Avenue & Evergreen Street (PM peak hour)
6. Avenida Barbosa & Arrow Highway (AM peak hour)
7. I-605 Southbound On-Ramp & Live Oak Avenue (PM peak hour)
8. I-605 Northbound Off-Ramp & Live Oak Avenue (both peak hours)
9. I-605 Southbound Off-Ramp & Arrow Highway (AM peak hour)
10. Buena Vista Street & Huntington Drive (PM peak hour)
13. Buena Vista Street & Evergreen Street (PM peak hour)
14. Buena Vista Street & Three Ranch Road (both peak hours)
15. Buena Vista Street & Duarte Road (both peak hours)
16. Buena Vista Street & Village Road (both peak hours)
17. I-210 Westbound Off-Ramp & Central Avenue (both peak hours)
18. Cinco Robles Drive & Duarte Road (both peak hours)
19. Village Road & Duarte Road (both peak hours)
22. Circle Road & Duarte Road (both peak hours)
25. Highland Avenue & Evergreen Street (AM peak hour)
27. Mt. Olive Drive/I-605 Ramps & Huntington Drive (both peak hours)

FUTURE PLUS PROJECT INTERSECTION IMPACTS

As presented in Table 8, after applying the aforementioned significant impact criteria, it was determined that the proposed Project would significantly impact traffic at the following nine study intersections under the Future plus Project scenario:

1. Live Oak Avenue & Arrow Highway (PM peak hour, City of Irwindale)
6. Avenida Barbosa & Arrow Highway (AM peak hour, City of Irwindale)
8. I-605 Northbound Off-Ramp & Live Oak Avenue (both peak hours, City of Irwindale)
13. Buena Vista Street & Evergreen Street (PM peak hour, City of Duarte)
15. Buena Vista Street & Duarte Road (both peak hours, City of Duarte)
16. Buena Vista Street & Village Road (PM peak hour, City of Duarte)
17. I-210 Westbound Off-Ramp & Central Avenue (both peak hours, City of Duarte)
19. Village Road & Duarte Road (both peak hours, City of Duarte)
22. Circle Road & Duarte Road (both peak hours, City of Duarte)

SIGNAL WARRANT ANALYSIS

Nine of the study intersections are currently unsignalized:

8. I-605 Northbound Off-Ramp & Live Oak Avenue
14. Buena Vista Street & Three Ranch Road
16. Buena Vista Street & Village Road
17. I-210 Westbound Off-Ramp & Central Avenue
18. Cinco Robles Drive & Duarte Road
19. Village Road & Duarte Road
20. Duncannon Avenue & Evergreen Street
22. Circle Road & Duarte Road
25. Highland Avenue & Evergreen Street

Traffic volumes and lane configurations, as presented in Appendices A 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 9, the following five intersections meet the signal warrant thresholds under the AM and/or PM peak hours for one of the above conditions¹:

8. I-605 Northbound Off-Ramp & Live Oak Avenue (all conditions)
16. Buena Vista Street & Village Road (Existing plus Project, future, and Future plus Project conditions)
17. I-210 Westbound Off-Ramp & Central Avenue (future and Future plus Project conditions)
19. Village Road & Duarte Road (Existing plus Project, future, and Future plus Project conditions)
22. Circle Road & Duarte Road (Existing plus Project, future, and Future plus Project conditions)

Signal warrant worksheets are included in Appendix E.

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 9
SIGNAL WARRANT ANALYSIS**

ID	N/S Street Name	E/W Street Name	Time Period	Existing	Existing Plus Project	Future	Future Plus Project
8	I-605 Northbound Off-Ramp	Live Oak Avenue	AM	YES	YES	YES	YES
			PM	YES	YES	YES	YES
14	Buena Vista Street	3 Ranch Road	AM	NO	NO	NO	NO
			PM	NO	NO	NO	NO
16	Buena Vista Street	Village Road	AM	NO	NO	NO	NO
			PM	NO	YES	YES	YES
17	I-210 Westbound Off-Ramp	Central Avenue	AM	NO	NO	YES	YES
			PM	NO	NO	YES	YES
18	Cinco Robles Drive	Duarte Road	AM	NO	NO	NO	NO
			PM	NO	NO	NO	NO
19	Village Road	Duarte Road	AM	NO	YES	YES	YES
			PM	NO	YES	YES	YES
20	Duncannon Avenue	Evergreen Street	AM	NO	NO	NO	NO
			PM	NO	NO	NO	NO
22	Circle Road	Duarte Road	AM	NO	YES	YES	YES
			PM	NO	NO	YES	YES
25	Highland Avenue	Evergreen Street	AM	NO	NO	NO	NO
			PM	NO	NO	NO	NO

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.

8. *I-605 Northbound Off-Ramp & Live Oak Avenue*

The intersection is recommended for signalization as a mitigation. The intersection is created by two public roads and is operating at an existing LOS F in the AM peak hour and LOS F in the PM peak hour. The measure would mitigate the significant Project impact under the Existing plus Project and Future plus Project conditions. The intersection meets the peak hour signal warrant².

² 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.

16. Buena Vista Street & Village Road

The intersection is recommended for signalization as a mitigation. The intersection is created by a public road and private drive and is operating at an existing LOS C in the AM peak hour and LOS C in the PM peak hour. The measure would mitigate the significant Project impact under the Existing plus Project and Future plus Project conditions. The intersection meets the peak hour signal warrant³.

17. I-210 Westbound Off-Ramp & Central Avenue

The intersection is recommended for signalization as a mitigation. The intersection is created by two public roads and is operating at an existing LOS F in the AM peak hour and LOS F in the PM peak hour. The measure would mitigate the significant Project impact under the Future plus Project condition. The intersection meets the peak hour signal warrant³.

19. Village Road & Duarte Road

The intersection is recommended for signalization as a mitigation. The intersection is created by a public road and private drive and is operating at an existing LOS E in the AM peak hour and LOS E in the PM peak hour. The measure would mitigate the significant Project impact under the Existing plus Project and Future plus Project conditions. The intersection meets the peak hour signal warrant³.

22. Circle Road & Duarte Road

The intersection is recommended for signalization as a mitigation. The intersection is created by a public road and private drive and is operating at an existing LOS B in the AM peak hour and LOS C in the PM peak hour. The measure would mitigate the significant Project impact under the Future plus Project condition. The intersection meets the peak hour signal warrant³.

³ 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.

PHYSICAL IMPROVEMENTS DETERMINED TO BE NOT RECOMMENDED

Provide below is a discussion of physical measures that were explored but due to physical constraints or potential secondary impacts, these mitigation measures have been determined to be infeasible. However, this summary is provided to provide the opportunity for further public input on potential improvements explored:

1. Live Oak Avenue & Arrow Highway

A mitigation measure was analyzed involving a modification to the northbound approach on Live Oak Avenue to change the dedicated free-flow right-turn into a shared left/right-turn. The mitigation would require the removal of the free-flow right-turn and the reduction or removal of the pedestrian refuge island to create the shared left/right-turn lane. The mitigation would reduce the intersection operations to a less than significant level. The mitigation is not recommended due to the reduction or removal of the pedestrian refuge island.

6. Avenida Barbosa & Arrow Highway

A mitigation measure was analyzed involving a modification to the eastbound approach on Arrow Highway to provide a second eastbound left-turn lane within the existing roadway width. The mitigation would require restriping the approach to change from one left-turn lane and two through lanes into two left-turn lanes and two through lanes. The mitigation would reduce the intersection operations to a less than significant level. The mitigation is not recommended due to potential conflicts and turning radii of trucks entering and exiting the landfill to the south of Arrow Highway.

13. Buena Vista Street & Evergreen Street

A mitigation measure was analyzed involving a modification to the northbound approach on Buena Vista to change one northbound through lane into a northbound shared through/right lane. The mitigation would require restriping the approach to change from two through lanes and one right-turn lane into one through lane, one shared through/right-turn lane, and one right-turn lane. The mitigation would reduce the intersection operations to a less than significant level. The mitigation is not recommended due to potential limited line of sight and pedestrian conflicts with the northbound multiple right-turn lanes.

15. Buena Vista Street & Duarte Road

A mitigation measure was analyzed involving the installation of a right-turn overlap phase in the westbound direction. The intersection was determined to have an existing de facto operational right-



turn lane based on the measurements of the westbound shared through/right-turn lane and the operations of the lane during the AM and PM peak hours. The mitigation was determined to be infeasible due to the lack of a dedicated westbound right-turn lane at the intersection.

SUMMARY OF SIGNIFICANT IMPACTS AFTER PROPOSED MITIGATION MEASURES

Table 10 and Table 11 show LOS and significant impact analysis results after implementation of the aforementioned mitigation measures under existing and future conditions. As presented in Table 7 and Table 8, the Project was determined to significantly impact traffic at two intersections under Existing plus Project conditions and nine 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 following intersections:

1. Live Oak Avenue & Arrow Highway (under future conditions only, City of Irwindale)
6. Avenida Barbosa & Arrow Highway (under future conditions only, City of Irwindale)
13. Buena Vista Street & Evergreen Street (under future conditions only, City of Duarte)
15. Buena Vista Street & Duarte Road (under future conditions only, City of Duarte)

**TABLE 10
EXISTING PLUS PROJECT MITIGATION
INTERSECTION LEVELS OF SERVICE**

ID	N/S Street Name	E/W Street Name	Jurisdiction Control Type	Time Period	ICU Methodology						HCM Methodology					
					Existing Conditions		Ex + Proj + Mit		Change in V/C	Significant Impact	Existing Conditions		Ex + Proj + Mit		Change in Delay	Significant Impact
					V/C	LOS	V/C	LOS			Delay	LOS	Delay	LOS		
1	Live Oak Avenue	Arrow Highway	Irwindale Signalized	AM PM	1.023 0.718	F C	1.023 0.741	F C	0.000 0.023	NO NO	- -	- -	- -	- -	- -	- -
2	Mountain Avenue	Central Avenue	Duarte, Monrovia Signalized	AM PM	0.722 0.692	C B	0.728 0.692	C B	0.006 0.000	NO NO	- -	- -	- -	- -	- -	- -
3	Mountain Avenue	Evergreen Street	Duarte, Monrovia Signalized	AM PM	0.609 0.866	B D	0.610 0.871	B D	0.001 0.005	NO NO	- -	- -	- -	- -	- -	- -
4	Mountain Avenue	Duarte Road	Duarte, Monrovia Signalized	AM PM	0.500 0.497	A A	0.513 0.503	A A	0.013 0.006	NO NO	- -	- -	- -	- -	- -	- -
5	Buena Vista Street	Bateman Avenue/ Avenida Barbosa	Irwindale Signalized	AM PM	0.406 0.506	A A	0.412 0.541	A A	0.006 0.035	NO NO	- -	- -	- -	- -	- -	- -
6	Avenida Barbosa	Arrow Highway	Irwindale Signalized	AM PM	0.841 0.586	D A	0.894 0.608	D B	0.053 0.022	NO NO	- -	- -	- -	- -	- -	- -
7	I-605 Southbound On-Ramp	Live Oak Avenue	Irwindale, Caltrans Signalized	AM PM	0.528 0.783	A C	0.528 0.783	A C	0.000 0.000	NO NO	- -	- -	- -	- -	- -	- -
8	I-605 Northbound Off-Ramp	Live Oak Avenue	Irwindale, Caltrans Signalized	AM PM	0.875 0.782	D C	0.875 0.782	D C	0.000 0.000	NO NO	- -	- -	- -	- -	- -	- -
9	I-605 Southbound Off-Ramp	Arrow Highway	Irwindale, Caltrans Signalized	AM PM	0.880 0.507	D A	0.890 0.513	D A	0.010 0.006	NO NO	- -	- -	- -	- -	- -	- -
10	Buena Vista Street	Huntington Drive	Duarte Signalized	AM PM	0.775 0.744	C C	0.779 0.758	C C	0.004 0.014	NO NO	- -	- -	- -	- -	- -	- -
11	Buena Vista Street	Central Avenue	Duarte Signalized	AM PM	0.579 0.621	A B	0.626 0.638	B B	0.047 0.017	NO NO	- -	- -	- -	- -	- -	- -
12	Buena Vista Street	I-210 Westbound On-Ramp	Duarte, Caltrans Signalized	AM PM	0.397 0.550	A A	0.444 0.618	A B	0.047 0.068	NO NO	- -	- -	- -	- -	- -	- -
13	Buena Vista Street	Evergreen Street/ I-210 Eastbound On-Ramp	Duarte, Caltrans Signalized	AM PM	0.537 0.679	A B	0.613 0.739	B C	0.076 0.060	NO NO	- -	- -	- -	- -	- -	- -
14	Buena Vista Street	3 Ranch Road	Duarte Signalized	AM PM	- -	- -	- -	- -	- -	- -	15.1 23.1	C C	19.5 35.1	C E	4.4 12.0	NO NO
15	Buena Vista Street	Duarte Road	Duarte Signalized	AM PM	0.664 0.731	B C	0.783 0.852	C D	0.119 0.121	NO NO	- -	- -	- -	- -	- -	- -
16	Buena Vista Street	Village Road	Duarte Signalized	AM PM	0.357 0.337	A A	0.456 0.376	A A	0.099 0.039	NO NO	- -	- -	- -	- -	- -	- -
17	I-210 Westbound Off-Ramp	Central Avenue	Duarte, Caltrans Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	194.9 105.4	F F	330.3 118.5	F F	135.4 13.1	NO NO
18	Cinco Robles Drive	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	22.0 20.9	C C	32.9 25.9	D D	10.9 5.0	NO NO
19	Village Road	Duarte Road	Duarte Signalized	AM PM	0.429 0.404	A A	0.544 0.502	A A	0.115 0.098	NO NO	- -	- -	- -	- -	- -	- -
20	Duncannon Avenue	Evergreen Street	Duarte All-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	7.8 7.3	A A	7.8 7.3	A A	0.0 0.0	NO NO
21	Hope Drive	Duarte Road	Duarte Signalized	AM PM	0.327 0.381	A A	0.386 0.445	A A	0.059 0.064	NO NO	- -	- -	- -	- -	- -	- -
22	Circle Road	Duarte Road	Duarte Signalized	AM PM	- -	- -	- -	- -	- -	- -	14.8 20.6	B C	18.7 29.6	C D	3.9 9.0	NO NO
23	Highland Avenue	Huntington Drive	Duarte Signalized	AM PM	0.694 0.647	B B	0.697 0.674	B B	0.003 0.027	NO NO	- -	- -	- -	- -	- -	- -
24	Highland Avenue	Central Avenue	Duarte Signalized	AM PM	0.713 0.750	C C	0.723 0.756	C C	0.010 0.006	NO NO	- -	- -	- -	- -	- -	- -
25	Highland Avenue	Evergreen Street	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	40.2 16.8	E C	49.8 17.7	E C	9.6 0.9	NO NO
26	Highland Avenue	Business Center Drive	Duarte Signalized	AM PM	0.353 0.364	A A	0.373 0.378	A A	0.020 0.014	NO NO	- -	- -	- -	- -	- -	- -
27	Mt Olive Drive/I-605 Ramps	Huntington Drive	Duarte, Caltrans Signalized	AM PM	0.968 1.024	E F	0.987 1.040	E F	0.019 0.016	NO NO	- -	- -	- -	- -	- -	- -

**TABLE 11
FUTURE PLUS PROJECT MITIGATION
INTERSECTION LEVELS OF SERVICE**

ID	N/S Street Name	E/W Street Name	Jurisdiction Control Type	Time Period	ICU Methodology						HCM Methodology					
					Future Conditions		Fut + Proj + Mit		Change in V/C	Significant Impact	Future Conditions		Fut + Proj + Mit		Change in Delay	Significant Impact
					V/C	LOS	V/C	LOS			Delay	LOS	Delay	LOS		
1	Live Oak Avenue	Arrow Highway	Irwindale Signalized	AM PM	1.158 0.900	F D	1.158 0.923	F E	0.000 0.023	NO YES	-	-	-	-	-	-
2	Mountain Avenue	Central Avenue	Duarte, Monrovia Signalized	AM PM	0.796 0.757	C C	0.801 0.758	D C	0.005 0.001	NO NO	-	-	-	-	-	-
3	Mountain Avenue	Evergreen Street	Duarte, Monrovia Signalized	AM PM	0.666 0.973	B E	0.667 0.978	B E	0.001 0.005	NO NO	-	-	-	-	-	-
4	Mountain Avenue	Duarte Road	Duarte, Monrovia Signalized	AM PM	0.735 0.728	C C	0.754 0.734	C C	0.019 0.006	NO NO	-	-	-	-	-	-
5	Buena Vista Street	Bateman Avenue/ Avenida Barbosa	Irwindale Signalized	AM PM	0.482 0.602	A B	0.488 0.637	A B	0.006 0.035	NO NO	-	-	-	-	-	-
6	Avenida Barbosa	Arrow Highway	Irwindale Signalized	AM PM	1.064 0.823	F D	1.118 0.842	F D	0.054 0.019	YES NO	-	-	-	-	-	-
7	I-605 Southbound On-Ramp	Live Oak Avenue	Irwindale, Caltrans Signalized	AM PM	0.630 0.932	B E	0.630 0.932	B E	0.000 0.000	NO NO	-	-	-	-	-	-
8	I-605 Northbound Off-Ramp	Live Oak Avenue	Irwindale, Caltrans Signalized	AM PM	1.053 0.977	F E	1.071 0.984	F E	0.018 0.007	NO NO	-	-	-	-	-	-
9	I-605 Southbound Off-Ramp	Arrow Highway	Irwindale, Caltrans Signalized	AM PM	1.101 0.744	F C	1.110 0.750	F C	0.009 0.006	NO NO	-	-	-	-	-	-
10	Buena Vista Street	Huntington Drive	Duarte Signalized	AM PM	0.867 1.019	D F	0.871 1.023	D F	0.004 0.004	NO NO	-	-	-	-	-	-
11	Buena Vista Street	Central Avenue	Duarte Signalized	AM PM	0.646 0.754	B C	0.694 0.771	B C	0.048 0.017	NO NO	-	-	-	-	-	-
12	Buena Vista Street	I-210 Westbound On-Ramp	Duarte, Caltrans Signalized	AM PM	0.506 0.717	A C	0.553 0.786	A C	0.047 0.069	NO NO	-	-	-	-	-	-
13	Buena Vista Street	Evergreen Street/ I-210 Eastbound On-Ramp	Duarte, Caltrans Signalized	AM PM	0.728 0.910	C E	0.808 0.970	D E	0.080 0.060	NO YES	-	-	-	-	-	-
14	Buena Vista Street	3 Ranch Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	25.1 38.6	D E	37.6 217.6	E F	12.5 179.0	NO NO
15	Buena Vista Street	Duarte Road	Duarte Signalized	AM PM	1.168 1.435	F F	1.345 1.615	F F	0.177 0.180	YES YES	-	-	-	-	-	-
16	Buena Vista Street	Village Road	Duarte Signalized	AM PM	0.402 0.391	A A	0.502 0.430	A A	0.100 0.039	NO NO	-	-	-	-	-	-
17	I-210 Westbound Off-Ramp	Central Avenue	Duarte, Caltrans Signalized	AM PM	0.663 0.636	B B	0.709 0.643	C B	0.046 0.007	NO NO	-	-	-	-	-	-
18	Cinco Robles Drive	Duarte Road	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	56.1 45.6	F E	106.5 61.3	F F	50.4 15.7	NO NO
19	Village Road	Duarte Road	Duarte Signalized	AM PM	0.562 0.532	A A	0.676 0.646	B B	0.114 0.114	NO NO	-	-	-	-	-	-
20	Duncannon Avenue	Evergreen Street	Duarte All-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	8.0 7.7	A A	8.0 7.7	A A	0.0 0.0	NO NO
21	Hope Drive	Duarte Road	Duarte Signalized	AM PM	0.450 0.480	A A	0.509 0.544	A A	0.059 0.064	NO NO	-	-	-	-	-	-
22	Circle Road	Duarte Road	Duarte Signalized	AM PM	0.496 0.533	A A	0.517 0.570	A A	0.021 0.037	NO NO	-	-	-	-	-	-
23	Highland Avenue	Huntington Drive	Duarte Signalized	AM PM	0.819 0.834	D D	0.824 0.861	D D	0.005 0.027	NO NO	-	-	-	-	-	-
24	Highland Avenue	Central Avenue	Duarte Signalized	AM PM	0.847 0.873	D D	0.856 0.878	D D	0.009 0.005	NO NO	-	-	-	-	-	-
25	Highland Avenue	Evergreen Street	Duarte Two-Way Stop Controlled	AM PM	- -	- -	- -	- -	- -	- -	534.1 22.3	F C	801.4 23.8	F C	267.3 1.5	NO NO
26	Highland Avenue	Business Center Drive	Duarte Signalized	AM PM	0.763 0.599	C A	0.784 0.600	C A	0.021 0.001	NO NO	-	-	-	-	-	-
27	Mt Olive Drive/I-605 Ramps	Huntington Drive	Duarte, Caltrans Signalized	AM PM	1.133 1.187	F F	1.151 1.203	F F	0.018 0.016	NO 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 ($V/C \geq 0.02$), 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 ($V/C \geq 0.02$).

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 3 and trip distribution estimates presented in Figure 5, 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 $\frac{1}{4}$ mile of the Project site and express bus routes and rail service within two miles of the Project site.

Within $\frac{1}{4}$ -mile of the Project site, Metro operates one local line and one light rail line; Foothill transit operates one local line; and Duarte Transit also 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 3, a transit credit of 4% was taken for the Project. This credit accounts for trips made to and from the Project site using transit. The 4% transit credit is estimated to reduce Project generated trips by 75 vehicle trips during the AM peak hour and 68 during the PM peak hour on weekdays. Applying the AVR factor of 1.4, the Project would generate an estimated 105 transit riders in AM peak hour and an estimated 96 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. Shuttles operate with an assumed 30-minute headway during the peak hours. The bus services have an estimated capacity of approximately 800 persons during the peak hours based on a bus seating capacity of 40 persons for a shuttle bus and 40 persons for a standard bus. The Metro Gold Line with 6-minute headways in both the AM and PM peak hours, has an estimated capacity of over 9,000 persons during the peak hours. The total estimated capacity for transit is approximately 9,800 persons in the peak hour. The proposed Project's estimated transit riders of 107 in the AM peak hour and 97 in the PM peak hour would utilize approximately 1.09% of available transit capacity during the AM peak hour and 0.99% during the PM peak hour.

6. VEHICLES MILES TRAVELED ANALYSIS

The State Office of Planning and Research (OPR) is currently developing revisions to the CEQA Guidelines under Senate Bill (SB) 743 for projects located in transit priority areas. The revised CEQA Guidelines will establish new criteria for determining the significance of transportation impacts and define alternative metrics to replace level of service (LOS). The legislation does not preclude the application of local general plan policies, zoning codes, conditions of approval, or any other planning requirements. SB 743 replaces LOS with Vehicle Miles Traveled (VMT) -related metric(s) and provides guidance on potential significance thresholds related to development projects, land use plans, and transportation infrastructure projects. While the regulations of SB 743 regarding determination of impacts have not been finalized or adopted at this time, the analyses was conducted to provide Project-related information.

AVERAGE TRIP LENGTH EVALUATION

To evaluate total VMT for the Project, the VMT analysis considered two methods for determining trip distance. The first method utilized trip distances as determined by the Southern California Association of Government's (SCAG) travel demand model, and the second method utilized the anonymous cell phone data from the existing City of Hope campus on weekdays for one year from July 2014 to June 2015.

SCAG TRAVEL DEMAND MODEL TRIP DISTANCES

The vehicle trip length for the Duarte transportation analysis zone (TAZ) was obtained from the SCAG 2012 Regional Transportation Plan (RTP) Travel Demand Model⁴. The SCAG travel demand model identifies trip distances as either Home-Based Work (HBW), Home-Based Other (HBO), or Non Home-Based (NHB). The HBW and HBO trip distances were selected as the HBW trip distance represents the average distance traveled by people who work at the City of Hope while the HBO trip distance represents the average distance traveled by people who visit the City of Hope. The Duarte TAZ in the 2008 SCAG travel demand model identifies the HBW distance as 16.1 miles and the HBO distance as 8.6 miles.

CELL PHONE DATA DISTANCES

Although the anonymous cell phone data included cell phone records for trip origins and destinations on weekdays throughout southern California (and beyond), this effort focused specifically on trip origins and

⁴ The SCAG 2012 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.

destinations in the counties of Kern County, Ventura County, Los Angeles County, Orange County, San Bernardino County, Riverside County, and San Diego County. The cell phone data captures the trip distances of a sample of anyone who was working or visiting the City of Hope from July 2014 to June 2015. The anonymous cell phone data estimates and aggregates the home zip code data into probability distributions. These distributions are used to develop the distribution of project traffic to the City of Hope campus. The weighted average trip distance was determined to be 14.3 miles.

TRIP GENERATION DETERMINATION

Due to the differences in trip types between the two methods, the trip generation used to conduct the VMT analysis is calculated differently. Although the total net new trips is the same for each method, the SCAG travel demand model uses splits the trip by type to determine the VMT.

SCAG TRAVEL DEMAND MODEL TRIP GENERATION

The existing City of Hope campus is generating approximately 11,929 daily trips. Based on the trip generation rate calculated for the existing City of Hope campus and the population estimates of existing workers and visitors, it is estimated that the existing City of Hope campus generates 9,920 daily worker trips and 2,009 daily visitor trips. The proposed Project is expected to generate an estimated 2,873 net new daily worker trips and 1,881 net new daily visitor trips. As such, the future City of Hope campus is expected to generate an estimated 12,793 daily worker trips and 3,890 daily visitor trips.

CELL PHONE DATA TRIP GENERATION

The existing City of Hope campus is generating approximately 11,929 daily trips. The proposed Project is expected to generate an estimated 4,753 net new daily trips. As such, the future City of Hope campus is expected to generate an estimated 16,682 daily trips.

SERVICE POPULATION DETERMINATION

To conduct a VMT per capita analysis, a service population of the existing and future campus was determined. Service populations typically account for residents and employees of a project. A service population of 5,632 (including full-time employees, part-time employees, contractors, and physicians) was determined for the existing City of Hope campus. A service population of 7,203 (including full-time employees, part-time employees, contractors, and physicians) was determined for the future City of Hope campus. Residents of the existing City of Hope campus and future City of Hope campus were not included

as part of the service population as the residents are individuals staying in the short-term hospitality units on the campus.

VMT ESTIMATE

SCAG TRAVEL DEMAND MODEL VMT

To calculate the daily VMT, the trips were multiplied by the associated SCAG travel demand model trip distances. Based on the City of Hope future estimated trip generation of 12,793 daily worker trips and 3,890 daily visitor trips, the future VMT is estimated to be approximately 239,421 daily VMT. Based on the City of Hope existing trip generation of 9,920 daily worker trips and 2,009 daily visitor trips, existing VMT is estimated to be approximately 176,989 daily VMT. The net new VMT of the Project is estimated to be approximately 62,432 daily VMT.

CELL PHONE DATA VMT

To calculate the daily VMT, the trips were multiplied weighted average trip distance. Based on the City of Hope future estimated trip generation of 16,682 daily trips, the future VMT is estimated to be approximately 238,553 daily VMT. Based on the City of Hope existing trip generation of 11,929 daily trips, existing VMT is estimated to be approximately 170,585 daily VMT. The net new VMT of the Project is estimated to be approximately 67,968 daily VMT.

VMT PER CAPITA ESTIMATE

SCAG TRAVEL DEMAND MODEL VMT PER CAPITA

To calculate the VMT per capita, the daily VMT was divided by the service population. For the existing City of Hope campus, the 176,989 daily VMT was divided by the service population of 5,362 persons to result in an estimated 33.0 VMT per capita. For the future City of Hope campus, the 239,421 daily VMT was divided by the service population of 7,203 persons to result in an estimated 33.2 VMT per capita. The net new VMT per capita of the Project is an estimated 33.9 VMT per capita.

CELL PHONE DATA VMT PER CAPITA

To calculate the VMT per capita, the daily VMT was divided by the service population. For the existing City of Hope campus, the 170,585 daily VMT was divided by the service population of 5,362 persons to result in



an estimated 31.8 VMT per capita. For the future City of Hope campus, the 238,553 daily VMT was divided by the service population of 7,203 persons to result in an estimated 33.1 VMT per capita. The net new VMT per capita of the Project is an estimated 36.9 VMT per capita.

7. CALTRANS ANALYSIS

This section presents an analysis of potential effects of the proposed Project on Caltrans facilities. Caltrans was consulted in-person on September 6, 2016 to determine the analysis methodologies to be used, and this section summarizes the results of the analysis prepared consistent with the direction given by Caltrans. 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, I-605, and I-10 freeways.

OFF-RAMP QUEUING ANALYSIS

In response to a request from Caltrans, 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 proposed Project. Queue lengths were estimated using Synchro 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 length of the ramp during the AM and PM peak hours.

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

8. I-605 Northbound Off-Ramp & Live Oak Avenue
9. I-605 Southbound Off-Ramp & Arrow Highway
13. Buena Vista Street & Evergreen Street (I-210 Eastbound Off-Ramp)
17. I-210 Westbound Off-Ramp & Central Avenue
27. Mt. Olive Drive/I-605 Ramps & Huntington Drive

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

- Existing (Year 2015)
- Existing plus Project
- Future (Year 2035)
- Future plus Project



QUEUING ANALYSIS

Table 12 and Table 13 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 length of the ramp under any existing scenarios with the Project. The freeway ramp queues would extend beyond the 85% length of the ramp at the intersection of I-210 Westbound Off-Ramp and Central Avenue under the AM peak hour Future plus Project scenario. The intersection is recommended for signalization as a mitigation. Table 14 presents a summary of the ramp queuing analysis at the intersection for the Future plus Project with mitigation scenario. The freeway ramp queues would not extend beyond 85% of the length of the ramp under the Future plus Project with mitigation scenario. Detailed queue calculations are provided in Appendix F.

**TABLE 12
EXISTING PLUS PROJECT OFF-RAMP QUEUE LENGTHS**

ID	Ramp	Control	Ramp length (ft)	85% Ramp Length (ft)	Ramp Turn Lanes at Termini Intersection			Existing				Existing plus Project				Queue Exceeds 85% of Storage Length?	
					# of Lanes	Move	Length (ft)	AM Peak Hour Queue [a]		PM Peak Hour Queue [a]		AM Peak Hour Queue [a]		PM Peak Hour Queue [a]		AM Peak Hour	PM Peak Hour
								Lane (ft)	Total (ft)								
8	I-605 NB Off-Ramp & Live Oak Avenue	Side Street Stop	2,660	2,261	2	SBR	2,660	680	680	370	630	905	905	398	630	NO	NO
						NBR	1,895	210		630		210		630			
9	I-605 SB Off-Ramp & Arrow Highway	Signal	1,065	905	2	SBL	1,065	234	234	74	74	234	234	74	74	NO	NO
						SBR	970	0		0		0		0			
13	Buena Vista Street & Evergreen Street	Signal	2,560	2,176	2	EBTL	2,560	85	85	202 [b]	202	136	136	221 [b]	221	NO	NO
						EBTR	2,560	[c]		[c]		[c]		[c]			
17	I-210 WB Off-Ramp/Car Dealership Driveway & Central Avenue	Side Street Stop	875	744	2	NBL	615	395	395	308	308	613	613	335	335	NO	NO
						NBR	875	10		15		13		15			
27	Mount Olive Drive/I-605 NB Off-Ramp & Huntington Drive	Signal	2,555	2,172	3	NBL	2,555	633 [b]	651	245	844	671 [b]	682	247	849	NO	NO
						NBTL	2,555	651 [b]		250		682 [b]		253			
						NBR	2,555	67		844 [b]		73		849 [b]			

Notes:

[a]: 95th percentile queue.

[b]: 95th percentile volume exceeds capacity, queue may be longer

[c]: Queue same as in adjacent lane

**TABLE 13
FUTURE PLUS PROJECT OFF-RAMP QUEUE LENGTHS**

ID	Ramp	Control	Ramp length (ft)	85% Ramp Length (ft)	Ramp Turn Lanes at Termini Intersection			Future				Future plus Project				Queue Exceeds 85% of Storage Length?	
					# of Lanes	Move	Length (ft)	AM Peak Hour Queue [a]		PM Peak Hour Queue [a]		AM Peak Hour Queue [a]		PM Peak Hour Queue [a]		AM Peak Hour	PM Peak Hour
								Lane (ft)	Total (ft)								
8	I-605 NB Off-Ramp & Live Oak Avenue	Side Street Stop	2,660	2,261	2	SBR	2,660	1523	1523	1395	1395	1835	1835	1435	1435	NO	NO
						NBR	1,895	320		1258		503		1258			
9	I-605 SB Off-Ramp & Arrow Highway	Signal	1,065	905	2	SBL	1,065	473 [b]	473	153 [b]	153	473 [b]	473	158 [b]	158	NO	NO
						SBR	970	0		0		0		0			
13	Buena Vista Street & Evergreen Street	Signal	2,560	2,176	2	EBTL	2,560	165	165	353 [b]	353	272 [b]	272	362 [b]	362	NO	NO
						EBTR	2,560	[c]		[c]		[c]		[c]			
17	I-210 WB Off-Ramp/Car Dealership Driveway & Central Avenue	Side Street Stop	875	744	2	NBL	615	625	625	700	700	860	860	738	738	YES	NO
						NBR	875	40		43		43		43			
27	Mount Olive Drive/I-605 NB Off-Ramp & Huntington Drive	Signal	2,555	2,172	3	NBL	2,555	977 [b]	978	508 [b]	1204	1004 [b]	1004	530 [b]	1215	NO	NO
						NBTL	2,555	978 [b]		523 [b]		992 [b]		537 [b]			
						NBR	2,555	166		1204 [b]		163		1215 [b]			

Notes:
[a]: 95th percentile queue.
[b]: 95th percentile volume exceeds capacity, queue may be longer
[c]: Queue same as in adjacent lane

**TABLE 14
FUTURE PLUS PROJECT MITIGATION OFF-RAMP QUEUE LENGTHS**

ID	Ramp	Control	Ramp length (ft)	85% Ramp Length (ft)	Ramp Turn Lanes at Termini Intersection			Future				Future plus Project plus Mitigation				Queue Exceeds 85% of Storage Length?	
					# of Lanes	Move	Length (ft)	AM Peak Hour Queue [a]		PM Peak Hour Queue [a]		AM Peak Hour Queue [a]		PM Peak Hour Queue [a]		AM Peak Hour	PM Peak Hour
								Lane (ft)	Total (ft)	Lane (ft)	Total (ft)	Lane (ft)	Total (ft)	Lane (ft)	Total (ft)		
17	I-210 WB Off-Ramp/Car Dealership Driveway & Central Avenue	Signal	875	744	2	NBL	615	625	625	700	700	329 [b]	329	370 [b]	370	NO	NO
						NBR	875	40		43		0		0			

Notes:

[a]: 95th percentile queue.

[b]: 95th percentile volume exceeds capacity, queue may be longer

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 five segments along the I-210, I-605, and I-10 freeways in both directions:

- I-210 east of I-605
- I-210 west of I-605
- I-605 south of I-210
- I-10 east of I-605
- I-10 west of I-605

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 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 was obtained from Caltrans' Performance Measurement System (PeMS) archived traffic data for the AM and PM peak periods for Tuesdays, Wednesdays, and Thursdays in November 2015 for most segments⁵ and the data was averaged across the days. Existing and Existing plus Project conditions on the mainline segments are presented in Table 15. Detailed LOS calculations are provided in Appendix G.

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):

⁵ Specifically, November 17, 18, and 19, 2015, 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, all of the westbound analyzed segments on I-210 and I-10 operate at a congested LOS F. During the PM peak hour, both the eastbound and westbound segments on I-210, the eastbound segments on I-10, and the northbound segments on I-605 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 2.9% of the Existing plus Project traffic volumes on the segments depending on location and direction. Segments where the Project accounts for more than 2% of the Existing plus Project traffic volumes would operate at LOS C or better during the AM peak hour. 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, one of the segments during the PM peak hour would operate at a worse LOS when compared to the Existing condition. The Project represents between 0.2% and 2.6% of the Existing plus Project traffic volumes on the segments depending on location and direction. One segment where the Project accounts for more than 2% of the Existing plus Project traffic volumes would operate at LOS F during the PM peak hour. The Project is projected to have a change in the MOE at two segments during the PM peak hour under the Existing plus Project scenario.

FUTURE AND FUTURE PLUS PROJECT

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 condition (Year 2035) taking into account projected changes in traffic over existing conditions from two primary sources: ambient growth in the existing traffic volumes due to the effects of overall regional growth and development outside the

study area, and 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:

- 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 area of Duarte was used to determine yearly growth rates of the future traffic. Growth rates of 0.52% per year for the Duarte RSA was used for the development of the future year scenario.
- 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, City of Monrovia, City of Irwindale, City of Bradbury, City of Azusa, and County of Los Angeles. A total of 13 cumulative projects were identified in the study area; these projects are listed in Table 6. 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 6 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 16 presents the future freeway mainline segment analysis. For both the Future and Future plus Project scenarios, during the AM peak hour, all of the westbound analyzed segments on I-210 and I-10 operate at a congested LOS F. During the PM peak hour, both the eastbound and westbound segments on I-210, the eastbound segments on I-10, and the northbound segments on I-605 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 0.1% and 2.5% of the Future plus Project traffic volumes on the segments depending on location and direction. Segments where the Project accounts for more than 2% of the Future plus Project traffic volumes would operate at LOS C or better during the AM peak hour. 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 0.2% and 2.1% of the Future plus Project traffic



volumes on the segments depending on location and direction. Segments where the Project accounts for more than 2% of the Future plus Project traffic volumes would operate at LOS C or better during the AM peak hour. The Project is projected to have no change in the MOE during the PM peak hour under the Future plus Project scenario.

**TABLE 15
EXISTING FREEWAY MAINLINE LEVEL OF SERVICE**

AM Peak Hour											
Location	Fwy Segment Name	Dir	Existing			Project Volume	Existing Plus Project			Project % of Total	Project Change in MOE
			Volume	LOS	Density		Volume	LOS	Density		
1	I-210 w/o I-605	EB	6,332	D	27.2	112	6,444	D	27.8	1.7%	No
		WB	3,476	F	-	18	3,494	F	-	0.5%	No
2	I-210 e/o I-605	EB	6,766	D	28.3	11	6,777	D	28.4	0.2%	No
		WB	6,153	F	-	67	6,220	F	-	1.1%	No
3	I-605 s/o I-210	NB	4,465	C	18.7	135	4,600	C	19.3	2.9%	No
		SB	5,625	C	22.3	21	5,646	C	22.4	0.4%	No
4	I-10 w/o I-605	EB	5,504	C	23.1	68	5,572	C	23.4	1.2%	No
		WB	6,478	F	-	11	6,489	F	-	0.2%	No
5	I-10 e/o I-605	EB	4,839	C	18.9	45	4,884	C	19.1	0.9%	No
		WB	4,416	F	-	7	4,423	F	-	0.2%	No
PM Peak Hour											
Location	Fwy Segment Name	Dir	Existing			Project Volume	Existing Plus Project			Project % of Total	Project Change in MOE
			Volume	LOS	Density		Volume	LOS	Density		
1	I-210 w/o I-605	EB	4,327	F	-	19	4,346	F	-	0.4%	No
		WB	4,622	F	-	100	4,722	F	-	2.1%	Yes
2	I-210 e/o I-605	EB	5,824	F	-	60	5,884	F	-	1.0%	No
		WB	6,261	F	-	11	6,272	F	-	0.2%	No
3	I-605 s/o I-210	NB	4,061	F	-	22	4,083	F	-	0.5%	No
		SB	4,574	B	17.8	120	4,694	C	18.3	2.6%	Yes
4	I-10 w/o I-605	EB	4,932	F	-	11	4,943	F	-	0.2%	No
		WB	5,869	C	24.8	60	5,929	C	25.1	1.0%	No
5	I-10 e/o I-605	EB	3,125	F	-	7	3,132	F	-	0.2%	No
		WB	5,500	C	23.1	40	5,540	C	23.3	0.7%	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 reflective of operations at location.

**TABLE 16
FUTURE FREEWAY MAINLINE LEVEL OF SERVICE**

AM Peak Hour											
Location	Fwy Segment Name	Dir	Future			Project Volume	Future Plus Project			Project % of Total	Project Change in MOE
			Volume	LOS	Density		Volume	LOS	Density		
1	I-210 w/o I-605	EB	7,562	E	35.0+	112	7,674	E	35.9	1.5%	No
		WB	4,325	F	-	18	4,343	F	-	0.4%	No
2	I-210 e/o I-605	EB	7,836	E	35.7	11	7,847	E	35.8	0.1%	No
		WB	7,272	F	-	67	7,339	F	-	0.9%	No
3	I-605 s/o I-210	NB	5,294	C	22.2	135	5,429	C	22.8	2.5%	No
		SB	6,456	D	26.5	21	6,477	D	26.6	0.3%	No
4	I-10 w/o I-605	EB	6,262	D	26.8	68	6,330	D	27.2	1.1%	No
		WB	7,278	F	-	11	7,289	F	-	0.2%	No
5	I-10 e/o I-605	EB	5,466	C	21.6	45	5,511	C	21.8	0.8%	No
		WB	4,959	F	-	7	4,966	F	-	0.1%	No

PM Peak Hour											
Location	Fwy Segment Name	Dir	Future			Project Volume	Future Plus Project			Project % of Total	Project Change in MOE
			Volume	LOS	Density		Volume	LOS	Density		
1	I-210 w/o I-605	EB	5,449	F	-	19	5,468	F	-	0.3%	No
		WB	5,716	F	-	100	5,816	F	-	1.7%	No
2	I-210 e/o I-605	EB	6,969	F	-	60	7,029	F	-	0.9%	No
		WB	7,415	F	-	11	7,426	F	-	0.1%	No
3	I-605 s/o I-210	NB	4,926	F	-	22	4,948	F	-	0.4%	No
		SB	5,549	C	22.0	120	5,669	C	22.5	2.1%	No
4	I-10 w/o I-605	EB	5,669	F	-	11	5,680	F	-	0.2%	No
		WB	6,732	D	29.4	60	6,792	D	29.8	0.9%	No
5	I-10 e/o I-605	EB	3,599	F	-	7	3,606	F	-	0.2%	No
		WB	6,241	D	26.7	40	6,281	D	26.9	0.6%	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 reflective of operations at location.

8. CONSTRUCTION PERIOD IMPACT ANALYSIS

The City of Duarte generally considers construction-related traffic to cause adverse but not significant impacts because, while sometimes inconvenient, construction-related traffic effects are temporary. LADOT requires implementation of worksite traffic control planes to ensure that any construction-related effects are minimized to the greatest extent possible.

CONSTRUCTION TRAFFIC

Construction of the Project is expected to be completed in four phases from 2018 to 2035. Each phase of construction is anticipated to involve five key aspects: (1) Demolition, (2) Site Preparation, (3) Grading, (4) Building Construction, and (5) Architectural Coating. The number of worker, trucks, and trips generated in each aspect of each phase is dependent on what is being construction and what is being demolished.

CONSTRUCTION TRUCKS

Haul Trucks

Peak hauling activity is anticipated to occur during the phase 1 grading. Approximately 26 haul trucks are expected on peak days of activity. The hauling activity is likely to use double belly dump haul trucks.

For access to the I-605 freeway to/from the south, the primary anticipated truck route will be via Duarte Road, Buena Vista Street, Avenida Barbosa, Arrow Highway, and Live Oak Avenue for inbound and outbound trucks. For access to the I-605 freeway to/from the north, the primary anticipated truck route will be via Duarte Road, Buena Vista Street, Avenida Barbosa, and Arrow Highway for inbound and outbound trucks. These trucks could impact the adjacent roadway network since the major roadways anticipated to be used as a truck route for the Project already experience congestion during peak traffic periods.

Equipment and Delivery Trucks

In addition to haul trucks, the site is also expected to generate equipment and delivery trucks during each phase of construction. One example would be concrete delivery, which would be required for the Project foundation. Other materials could include plumbing supplies, electrical fixtures, and items used in furnishing the Project. These materials would be delivered to the site and stored on-site. These deliveries are expected to occur in variety of vehicles, including small delivery trucks to cement mixer trucks and 18-wheel trucks. Additionally, construction equipment would also have to be delivered to the site. This equipment could include cranes, bulldozers, excavators, and other large items of machinery. Most of the heavy equipment is expected to be transported to the site on large trucks such as 18-wheelers or other similar vehicles.

Truck Staging

The Project proposes to provide adequate staging either on the Project site for trucks throughout the construction period.

CONSTRUCTION EMPLOYEES

The number of construction workers would vary throughout the construction period. The maximum number of workers expected to be generated on a peak worker trip day would occur during the phase 1 building construction and architectural coating and phase 2 demolition overlap, when it is expected that up to 355 workers could be on site on a single day. Parking for all construction workers would be provided either on the Project site or at an off-site parking location and shuttled to the Project site.

CONSTRUCTION PERIOD TRIP GENERATION

Based on the aforementioned information, a construction period trip generation analysis was conducted to estimate daily, morning and evening peak hour passenger car equivalent (PCE) trips. It was determined that the phase 1 building construction and architectural coating and phase 2 demolition overlap would generate the single day with the highest number of trips with 355 workers vehicles, 8 haul trucks, and 124 vendor trucks. Construction workers often travel to and from a worksite outside of the typical peak commute hours. For the purpose of the analysis, it was assumed that up to 40% of the construction workers would arrive during the peak morning commute hour and up to 40% would depart during the peak evening commute hour. Haul and delivery/equipment trucks were assumed to occur evenly throughout the 8-hour construction day. A PCE factor of 2.5 was assumed for double belly dump trucks and concrete truck types, while a PCE factor of 2.0 was assumed for vendor or delivery trucks, based on the 2010 *Highway Capacity Manual*.

Table 17 shows a summary of the maximum construction period trip generation. As shown, on a peak construction activity day, a total of up to 1,245 daily PCE trips are expected to occur, of which 212 PCE trips would occur during the morning peak hour and 150 PCE trips during the evening peak hour.

**TABLE 17
CONSTRUCTION TRIP GENERATION**

TRIP TYPE	Trip Generation Summary								
	Size	Unit	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Worker Trips [a]	355	Workers/day	709	142	0	142	0	142	142
Hauling Trucks [b]	8	Trucks/day	16	1	1	2	1	1	2
Vendor Trucks [b]	124	Trucks/day	248	16	16	32	16	16	32
<i>Passenger Car Equivalents (PCEs)</i>			536	35	35	70	35	35	70
Total Trips			1,245	177	35	212	35	177	212

Note: For hauling/vendor truck trips, PCE factor of 2 was used.

[a] Workers and visitors were assumed to arrive before 7:00 AM and depart after 3:00 PM. 40% of the worker trips were assumed to arrive and depart within the AM and PM peak hours.

[b] Truck trips were assumed to arrive and depart between 7:00 AM and 3:00 PM, an 8-hour work day.

The peak construction activity would generate fewer daily and peak hour trips than are projected for the full build-out of the Project (4,753 daily trips, 514 AM peak hour trips, and 462 PM peak hour trips, as shown in Table 5). The trip generation of the construction would have less of an impact on the traffic operations at the study intersections than the Project. Nonetheless, the influx of this material and equipment could create impacts on the adjacent roadway network based on the following considerations:

- There may be intermittent periods when large numbers of material deliveries are required, such as when concrete trucks would be needed for the parking garages and the buildings.
- Some of the materials and equipment could require the use of large trucks (18-wheelers), which could create additional congestion on the adjacent roadways.
- Delivery vehicles may need to park temporarily on adjacent roadways such as Duarte Road or Buena Vista Street as they deliver their items. Based on past experience, it is not uncommon for these types of deliveries to result in temporary lane closures.

Accordingly, several mitigation measures are proposed below to ensure that potential impacts remain less than significant during Project construction.

WORKER PARKING

During all phases of construction, it is anticipated that construction employees would be parked on-site and/or at an off-site parking location and shuttled to the Project site.

CONSTRUCTION MITIGATION MEASURES

The following measures are recommended to further ensure potential construction period impacts remain less than significant:

- The preferred haul route to and from the Project site shall be Duarte Road, Buena Vista Street, Avenida Barbosa, Arrow Highway, and Live Oak Avenue for inbound and outbound trucks to south I-605. The preferred haul route to and from the Project site shall be Duarte Road, Buena Vista Street, Avenida Barbosa, and Arrow Highway for inbound and outbound trucks to north I-605. Trucks shall not be permitted to travel along local residential streets.
- A flagman shall be placed at the truck entry and exit from the Project site onto Duarte Road and Buena Vista Street to control the flow of exiting trucks.
- Deliveries and pick-ups of construction materials shall be scheduled during non-peak travel periods to the degree possible and coordinated to reduce the potential of trucks waiting to load or unload for protracted periods of time.
- Access shall remain unobstructed for land uses in proximity to the Project site during Project construction.

- In the event of a lane or sidewalk closure, a worksite traffic control plan, approved by the City of Duarte, shall be implemented to route traffic or pedestrians around any such lane or sidewalk closures.
- A Construction Management Plan shall be developed by the contractor and approved by the City of Duarte. In addition to the measures identified above, a Construction Management Plan shall include the following:
 - Identify the locations of truck staging and detail measures to ensure that trucks use the specified haul route and do not travel through nearby residential neighborhoods.
 - Schedule vehicle movements to minimize vehicles waiting off-site and impeding public traffic flow on the surrounding streets.
 - Establish requirements for the loading, unloading, and storage of materials on the Project site.
 - Establish requirements for the temporary removal of parking spaces, time limits for the reduction of travel lanes, and closing or diversion of pedestrian facilities to ensure the safety of pedestrian and access to local businesses.
 - Coordinate with the City and emergency service providers to ensure adequate access is maintained to the Project site and neighboring businesses.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Project construction is considered a temporary, short-term impact. The analysis of construction impacts above concluded that Project construction impacts would be less than significant. Nevertheless, mitigation measures have been proposed, including a Construction Management Plan to ensure that Project impacts are reduced and that proper measures for protecting traffic flow and access would be maintained. The mitigation measures would further reduce the potential less than significant impacts.

9. SUMMARY AND CONCLUSIONS

This study was undertaken to analyze the potential traffic impacts of the proposed expansion of the City of Hope campus in the City of Duarte and City of Irwindale. The following summarizes the results of this analysis:

- The Project will consist of approximately 1,426,000 square feet of new development (approximately 1,038,500 net new square feet following the proposed demolition of approximately 387,500 square feet of existing structures), which would result in up to approximately 2,617,850 gross square feet of developed on the City of Hope campus. As part of the expansion, the Project is estimated to increase the hospital population (including inpatients, outpatients, full-time employees, part-time employees, contractors, physicians, and residents). The existing average daily population is approximately 6,448 persons. The population is estimated to increase to approximately 9,393 persons. The change in population includes increases to patients, employees, physicians, and residents.
- Vehicle access to the Project site will be provided off of Duarte Road and Buena Vista Street.
- The study includes analysis of 27 intersections, of which 18 intersections operate under signal control and the remaining 9 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 an estimated net external 4,753 daily trips, including 514 trips (448 inbound/66 outbound) during the AM peak hour and 462 trips (74 inbound/388 outbound) during the PM peak hour.
- Compared to the Existing conditions, the Project is expected to have two significantly impacted intersections, and compared to the Future conditions, the Project is expected to have nine significantly impacted intersections. All of the significantly impacted intersections would be mitigated under Existing plus Project conditions and five of the nine significantly impacted intersections would be mitigated under the Future plus Project conditions.
- The Project is not expected to significantly impact regional arterial, freeway, or transit facilities under the CMP criteria.
- The Project is estimated to create off-ramp queue lengths that exceed 85% of the length of the ramp for one off-ramp under the PM peak hour Future plus Project scenario. The proposed mitigation at the intersection would reduce the queue to less than 85% of the length of the ramp.
- The Project is projected to have a change in the MOE at two segments during the PM peak hour under the Existing plus Project scenario.
- Construction of the project would have the potential to disrupt traffic in the vicinity of the Project. The proposed mitigations measures would help reduce these impacts and potential Project construction traffic impacts would be less than significant due to the temporary nature of the construction.

REFERENCES

2010 Highway Capacity Manual, Transportation Research Board, 2010.

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

Trip Generation, 9th Edition, Institute of Transportation Engineers (ITE), 2010.

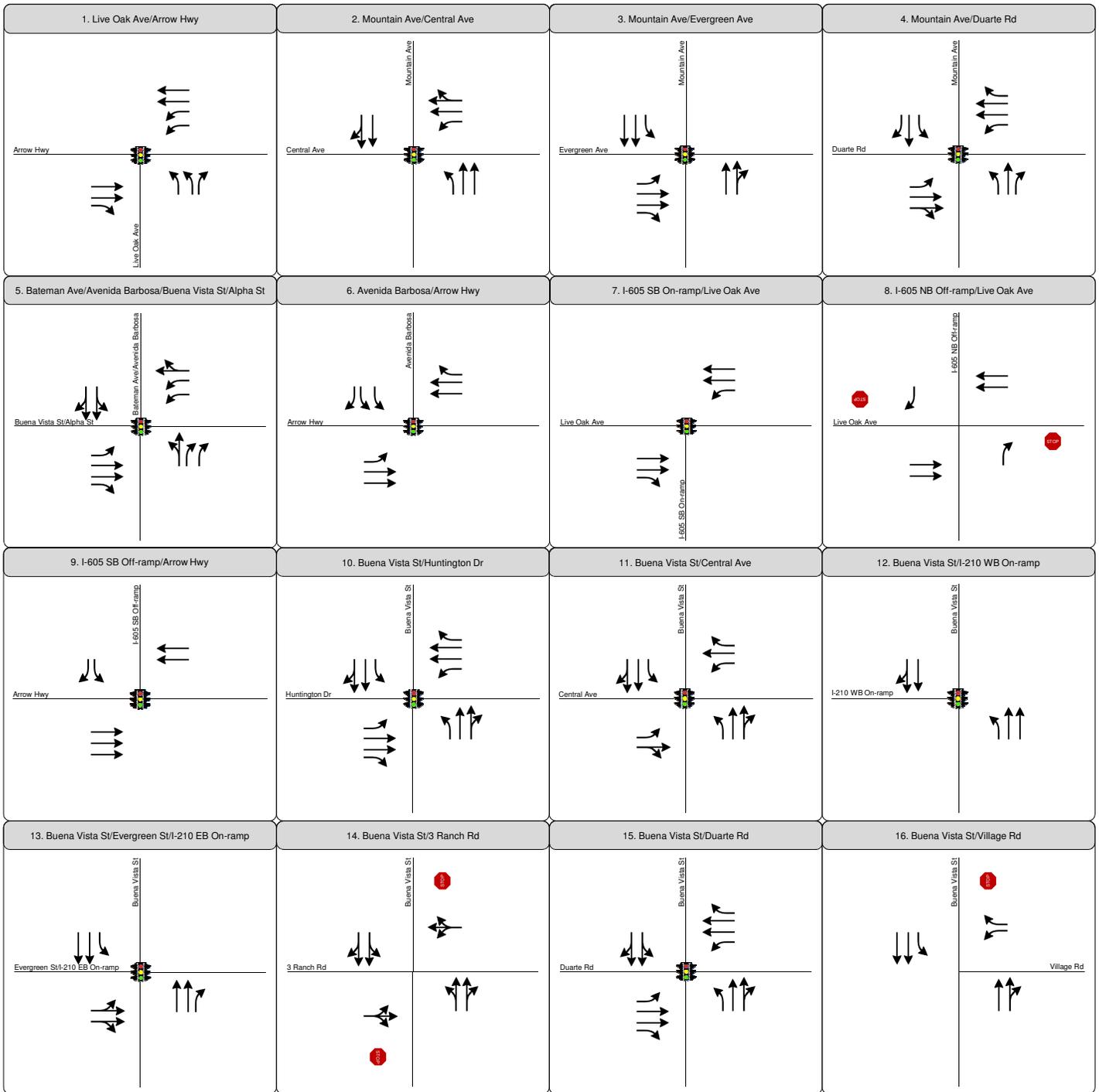
California Manual on Uniform Traffic Control Devices, Caltrans, 2014.

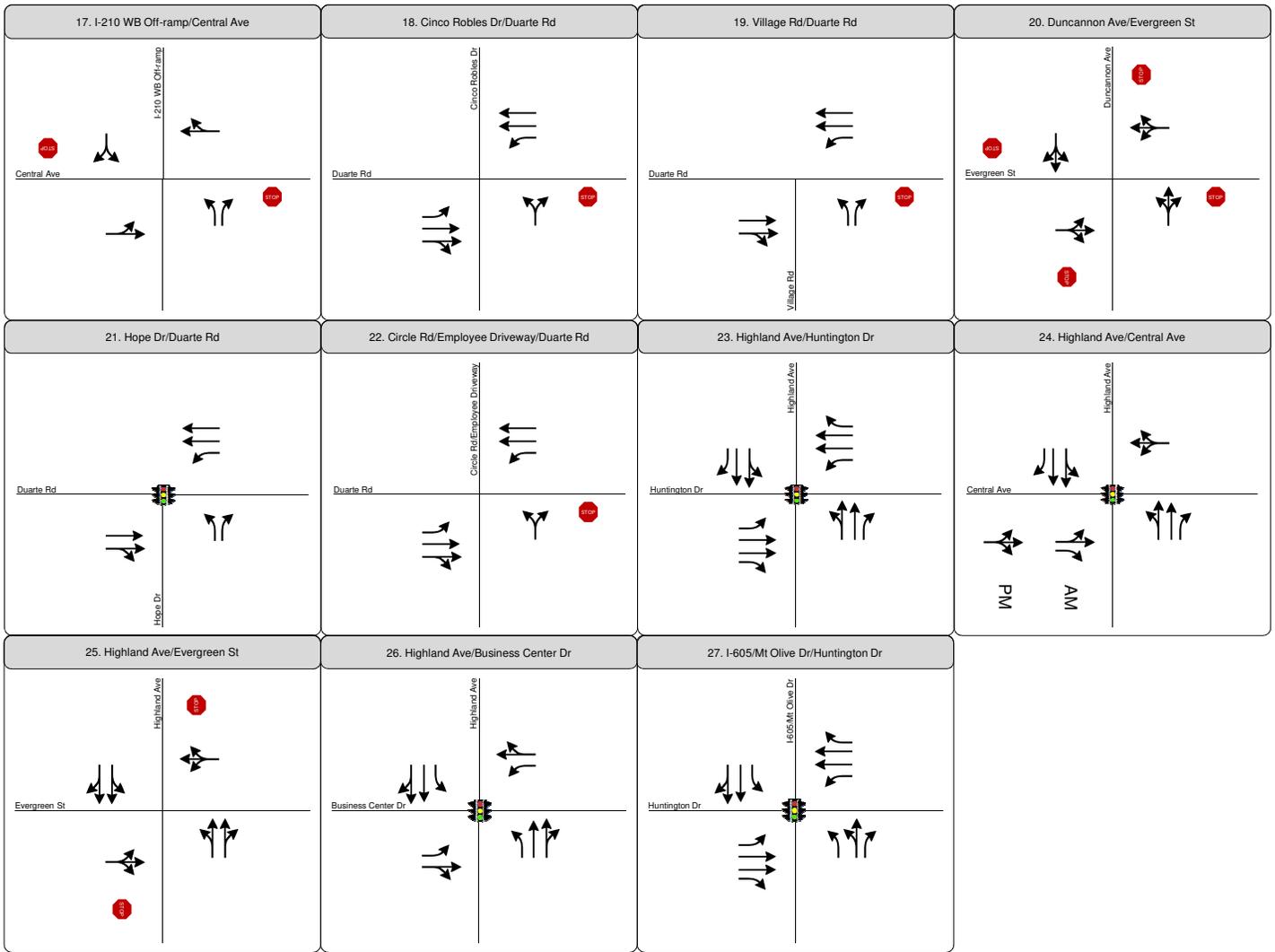
Guide for the Preparation of Traffic Impact Studies, Caltrans 2002

City of Hope Parking Study, Walker Parking Consultants, June 2016

APPENDIX A: LANE CONFIGURATIONS





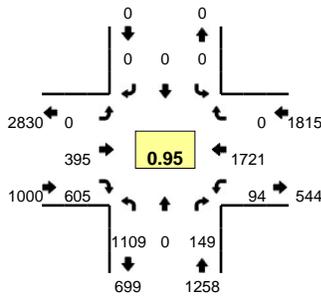


APPENDIX B: INTERSECTION COUNTS

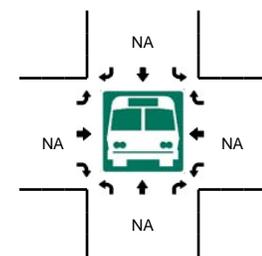
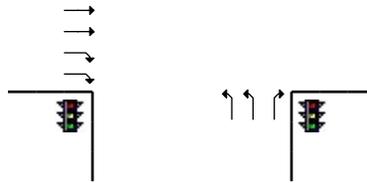
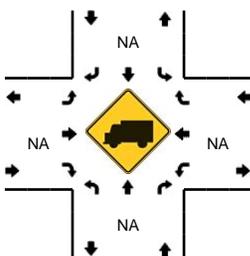
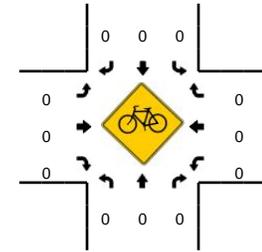
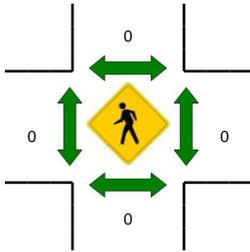
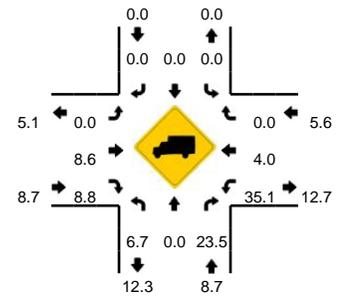


LOCATION: Live Oak Ave -- Arrow Hwy
CITY/STATE: Irwindale, CA

QC JOB #: 13634401
DATE: Wed, Nov 18 2015



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

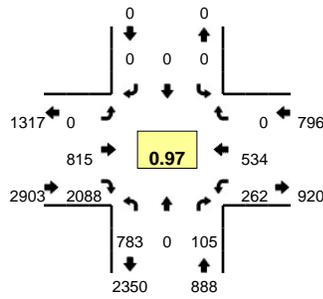


15-Min Count Period Beginning At	Live Oak Ave (Northbound)				Live Oak Ave (Southbound)				Arrow Hwy (Eastbound)				Arrow Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	267	0	28	0	0	0	0	0	0	71	157	0	21	451	0	0	995	
7:15 AM	287	0	32	0	0	0	0	0	0	105	142	0	19	462	0	0	1047	
7:30 AM	309	0	46	0	0	0	0	0	0	109	127	0	29	452	0	0	1072	
7:45 AM	246	0	43	0	0	0	0	0	0	110	179	0	25	356	0	0	959	4073
8:00 AM	234	0	49	0	0	0	0	0	0	86	163	0	28	346	0	0	906	3984
8:15 AM	255	0	43	0	0	0	0	0	0	113	162	0	20	369	0	0	962	3899
8:30 AM	245	0	36	0	0	0	0	0	0	115	151	0	31	337	0	0	915	3742
8:45 AM	207	0	55	0	0	0	0	0	0	92	134	0	26	277	0	0	791	3574
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	1236	0	184	0	0	0	0	0	0	436	508	0	116	1808	0	0	4288	
Heavy Trucks	72	0	28		0	0	0		0	28	32		52	48	0		260	
Pedestrians	0				0				0				0				0	
Bicycles	0				0				0				0				0	
Railroad																		
Stopped Buses																		

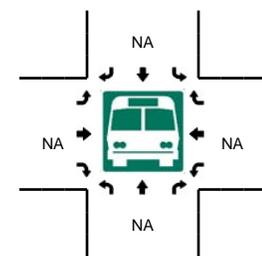
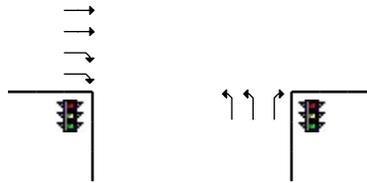
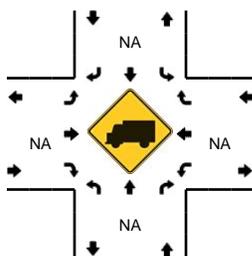
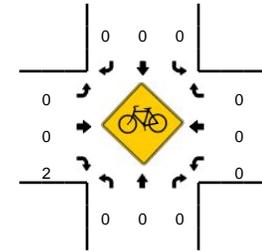
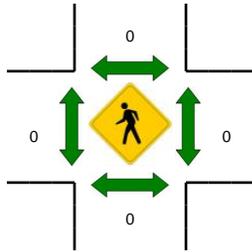
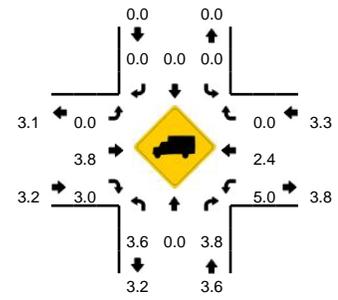
Comments:

LOCATION: Live Oak Ave -- Arrow Hwy
CITY/STATE: Irwindale, CA

QC JOB #: 13634402
DATE: Wed, Nov 18 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



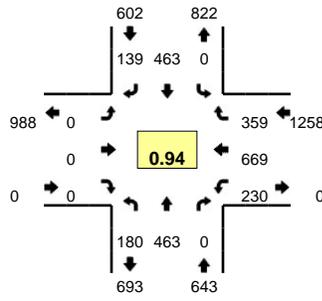
15-Min Count Period Beginning At	Live Oak Ave (Northbound)				Live Oak Ave (Southbound)				Arrow Hwy (Eastbound)				Arrow Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	136	0	33	0	0	0	0	0	0	203	515	0	61	124	0	0	1072	
4:15 PM	153	0	24	0	0	0	0	0	0	205	468	0	58	98	0	0	1006	
4:30 PM	152	0	37	0	0	0	0	0	0	198	530	0	58	93	0	0	1068	
4:45 PM	166	0	27	0	0	0	0	0	0	184	476	0	49	120	0	1	1023	4169
5:00 PM	191	0	27	0	0	0	0	0	0	191	538	0	93	131	0	0	1171	4268
5:15 PM	203	0	26	0	0	0	0	0	0	218	542	0	55	143	0	0	1187	4449
5:30 PM	185	0	28	0	0	0	0	0	0	210	530	0	68	125	0	0	1146	4527
5:45 PM	204	0	24	0	0	0	0	0	0	196	478	0	46	135	0	0	1083	4587

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	812	0	104	0	0	0	0	0	0	872	2168	0	220	572	0	0	4748
Heavy Trucks	28	0	4	0	0	0	0	0	0	48	68	0	8	20	0	0	176
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Railroad																	
Stopped Buses																	

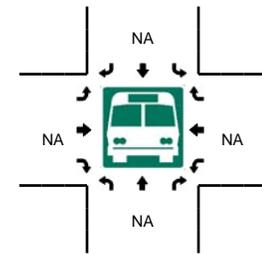
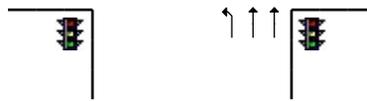
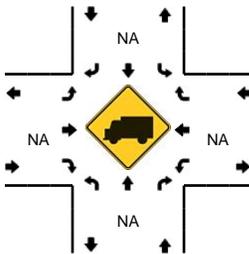
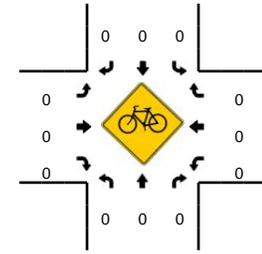
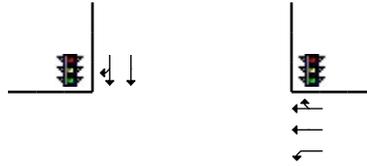
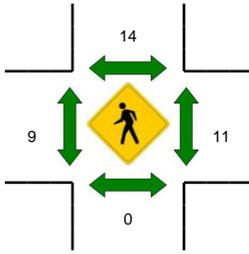
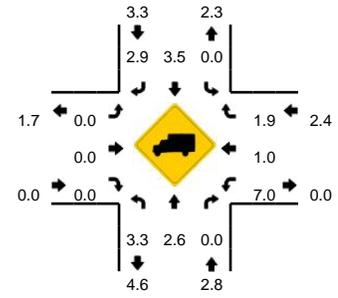
Comments:

LOCATION: Mountain Ave -- Central Ave
CITY/STATE: Duarte, CA

QC JOB #: 13634403
DATE: Wed, Nov 18 2015



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

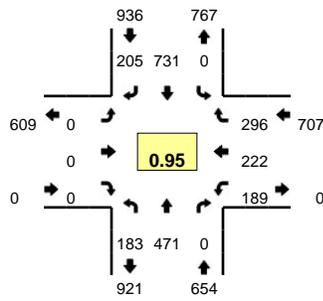


15-Min Count Period Beginning At	Mountain Ave (Northbound)				Mountain Ave (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	48	75	0	0	0	88	36	0	0	0	0	0	48	119	64	0	478	
7:15 AM	49	76	0	0	0	108	32	0	0	0	0	0	47	143	72	0	527	
7:30 AM	47	100	0	0	0	116	39	0	0	0	0	0	51	179	62	0	594	
7:45 AM	48	128	0	0	0	117	35	0	0	0	0	0	63	195	80	0	666	2265
8:00 AM	42	116	0	0	0	121	42	0	0	0	0	0	56	166	72	0	615	2402
8:15 AM	40	102	0	0	0	99	32	0	0	0	0	0	55	170	103	0	601	2476
8:30 AM	50	117	0	0	0	126	30	0	0	0	0	0	56	138	104	0	621	2503
8:45 AM	47	104	0	0	0	93	30	0	0	0	0	0	62	138	102	0	576	2413
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	192	512	0	0	0	468	140	0	0	0	0	0	252	780	320	0	2664	
Heavy Trucks	8	12	0	0	0	16	0	0	0	0	0	0	12	12	8	0	68	
Pedestrians	0	0	0	0	0	20	0	0	0	12	0	0	0	20	0	0	52	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

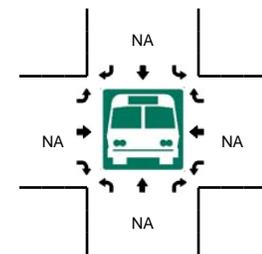
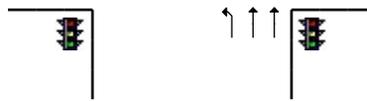
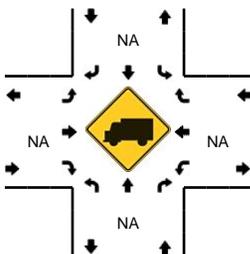
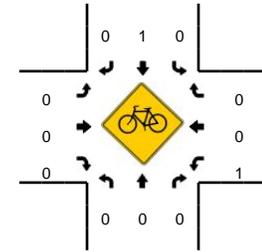
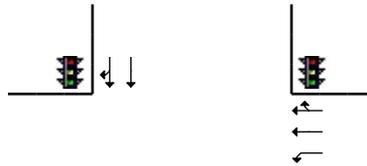
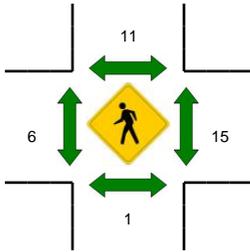
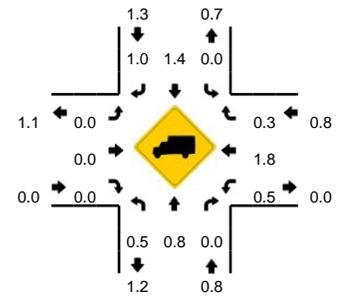
Comments:

LOCATION: Mountain Ave -- Central Ave
CITY/STATE: Duarte, CA

QC JOB #: 13634404
DATE: Wed, Nov 18 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



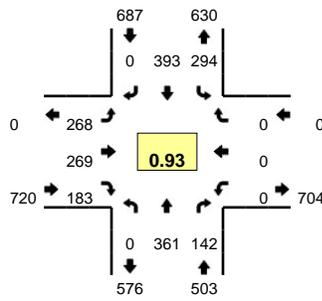
15-Min Count Period Beginning At	Mountain Ave (Northbound)				Mountain Ave (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	55	111	0	0	0	138	56	0	0	0	0	0	42	48	42	0	492	
4:15 PM	58	113	0	1	0	167	46	0	0	0	0	0	58	47	54	0	544	
4:30 PM	39	106	0	0	0	156	53	0	0	0	0	0	50	49	60	0	513	
4:45 PM	36	120	0	0	0	162	44	0	0	0	0	0	44	38	63	0	507	2056
5:00 PM	48	109	0	0	0	183	71	0	0	0	0	0	51	51	70	0	583	2147
5:15 PM	57	128	0	0	0	193	53	0	0	0	0	0	44	56	72	0	603	2206
5:30 PM	29	121	0	1	0	185	32	0	0	0	0	0	43	58	77	0	546	2239
5:45 PM	48	113	0	0	0	170	49	0	0	0	0	0	51	57	77	0	565	2297

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	228	512	0	0	0	772	212	0	0	0	0	0	176	224	288	0	2412	
Heavy Trucks	0	4	0	0	0	20	4	0	0	0	0	0	0	8	0	0	36	
Pedestrians	0	0	0	0	0	8	0	0	0	12	0	0	0	28	0	0	48	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
Railroad																		
Stopped Buses																		

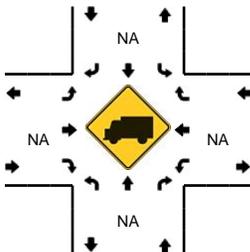
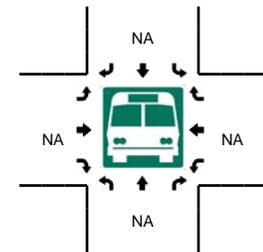
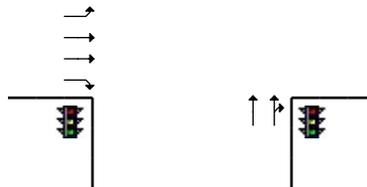
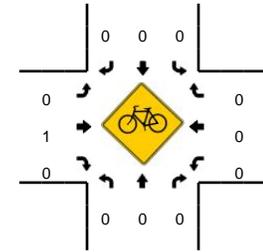
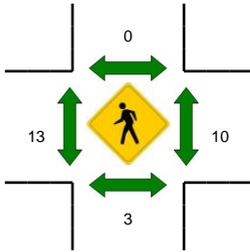
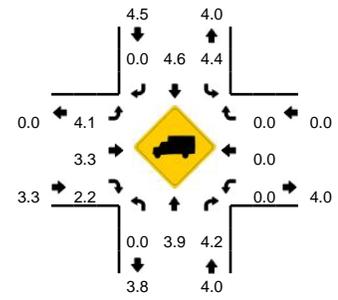
Comments:

LOCATION: Mountain Ave -- Evergreen St
CITY/STATE: Monrovia, CA

QC JOB #: 13634405
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

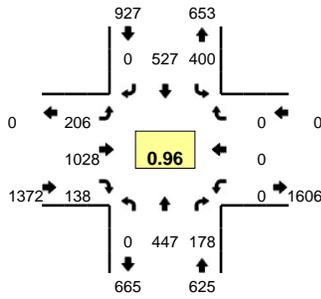


15-Min Count Period Beginning At	Mountain Ave (Northbound)				Mountain Ave (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	69	21	0	57	59	0	0	45	60	26	0	0	0	0	0	337	
7:15 AM	0	60	32	0	79	79	0	0	63	53	37	0	0	0	0	0	403	
7:30 AM	0	86	51	0	86	86	0	1	57	69	36	0	0	0	0	0	472	
7:45 AM	0	100	38	0	72	107	0	0	77	70	52	0	0	0	0	0	516	1728
8:00 AM	0	88	25	0	74	109	0	0	70	65	51	0	0	0	0	0	482	1873
8:15 AM	0	87	28	0	61	91	0	0	64	65	44	0	0	0	0	0	440	1910
8:30 AM	0	75	28	0	72	109	0	0	71	50	51	0	0	0	0	0	456	1894
8:45 AM	0	95	21	0	54	105	0	0	65	58	37	0	0	0	0	0	435	1813
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	400	152	0	288	428	0	0	308	280	208	0	0	0	0	0	2064	
Heavy Trucks	0	16	4		28	4	0		8	4	4		0	0	0		68	
Pedestrians		4				0				16				20			40	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																	0	
Stopped Buses																		

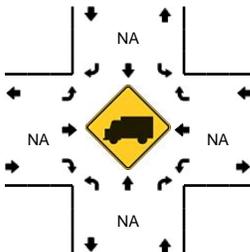
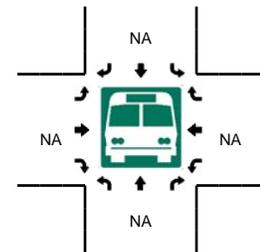
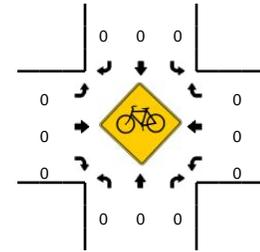
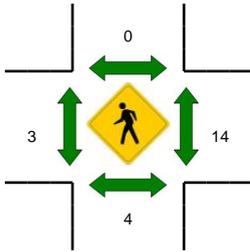
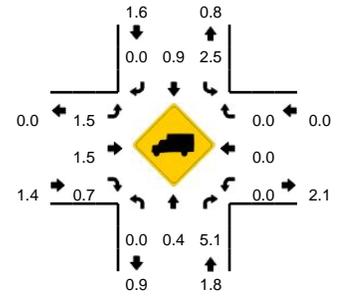
Comments:

LOCATION: Mountain Ave -- Evergreen St
CITY/STATE: Monrovia, CA

QC JOB #: 13634406
DATE: Wed, Nov 18 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

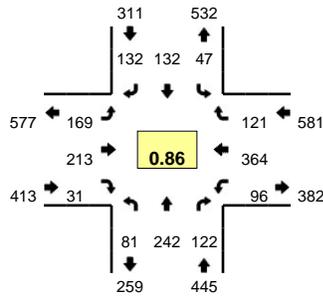


15-Min Count Period Beginning At	Mountain Ave (Northbound)				Mountain Ave (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	129	35	0	78	109	0	0	43	242	35	0	0	0	0	0	671	
4:15 PM	0	108	26	0	90	140	0	1	57	239	38	0	0	0	0	0	699	
4:30 PM	0	89	32	0	91	108	0	0	51	261	30	0	0	0	0	0	662	
4:45 PM	0	109	33	0	96	110	0	0	49	252	33	0	0	0	0	0	682	2714
5:00 PM	0	103	65	0	103	132	0	0	52	266	37	0	0	0	0	0	758	2801
5:15 PM	0	128	38	0	104	130	0	0	52	261	33	0	0	0	0	0	746	2848
5:30 PM	0	111	37	0	101	133	0	0	51	249	44	0	0	0	0	0	726	2912
5:45 PM	0	105	38	0	92	132	0	0	51	252	24	0	0	0	0	0	694	2924
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	412	260	0	412	528	0	0	208	1064	148	0	0	0	0	0	3032	
Heavy Trucks	0	0	8		12	4	0		4	12	0		0	0	0		40	
Pedestrians		4				0				4				20			28	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

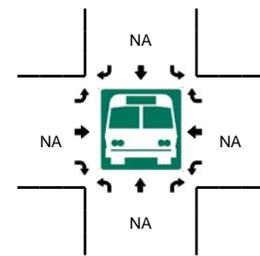
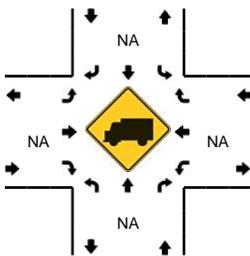
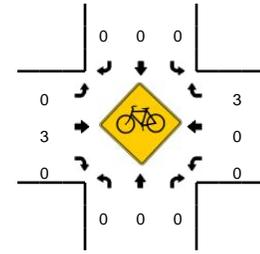
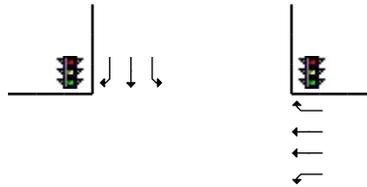
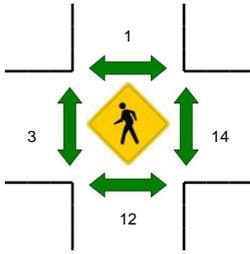
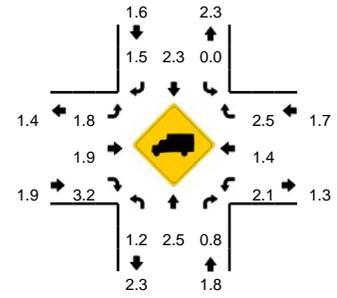
Comments:

LOCATION: Mountain Ave -- Duarte Rd
CITY/STATE: Duarte, CA

QC JOB #: 13634407
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

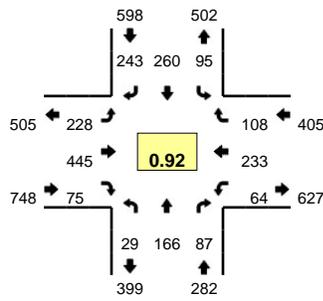


15-Min Count Period Beginning At	Mountain Ave (Northbound)				Mountain Ave (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	17	49	16	0	8	19	26	0	16	38	4	0	12	60	25	0	290	
7:15 AM	19	65	40	0	9	22	32	0	26	33	8	0	12	86	16	0	368	
7:30 AM	20	74	38	0	9	29	25	0	38	57	6	0	33	113	31	0	473	
7:45 AM	20	60	33	0	11	55	35	0	58	68	10	0	32	88	39	0	509	1640
8:00 AM	22	43	11	0	18	26	40	0	47	55	7	0	19	77	35	0	400	1750
8:15 AM	12	58	10	0	10	25	38	0	39	43	4	0	18	73	27	0	357	1739
8:30 AM	13	37	13	0	16	42	39	0	35	26	7	0	9	52	14	0	303	1569
8:45 AM	8	37	10	0	15	33	44	0	41	55	6	0	11	68	23	0	351	1411
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	80	240	132	0	44	220	140	0	232	272	40	0	128	352	156	0	2036	
Heavy Trucks	0	4	0	0	0	4	0	0	8	8	0	0	0	4	0	0	28	
Pedestrians	4	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	20	
Bicycles	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3	
Railroad																		
Stopped Buses																		

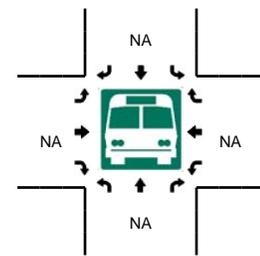
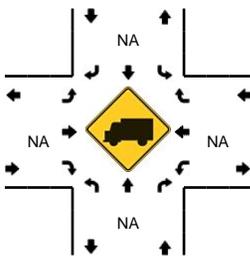
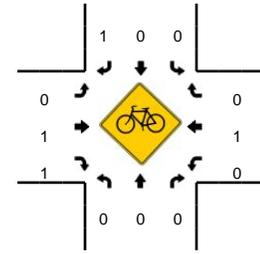
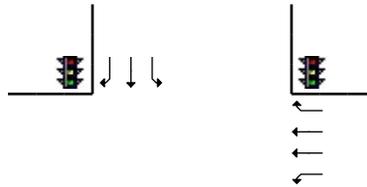
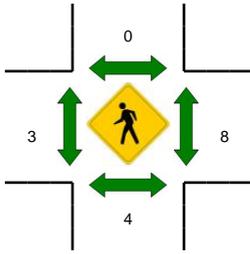
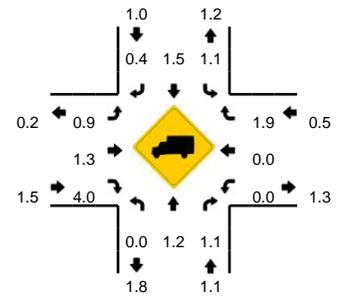
Comments:

LOCATION: Mountain Ave -- Duarte Rd
CITY/STATE: Duarte, CA

QC JOB #: 13634408
DATE: Wed, Nov 18 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

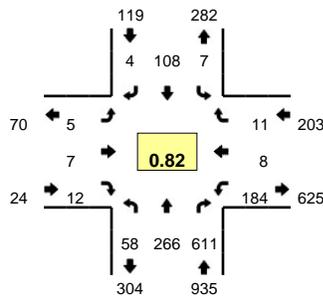


15-Min Count Period Beginning At	Mountain Ave (Northbound)				Mountain Ave (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	43	20	0	22	63	48	0	57	106	12	0	13	43	6	0	442	
4:15 PM	12	39	22	0	24	60	61	0	56	111	16	0	18	44	16	0	479	
4:30 PM	5	32	25	0	18	48	50	0	59	126	22	0	9	34	18	0	446	
4:45 PM	7	43	19	0	15	48	63	0	56	138	14	0	14	54	18	0	489	1856
5:00 PM	6	33	21	0	21	63	69	0	75	129	22	0	17	68	28	0	552	1966
5:15 PM	8	44	22	0	29	54	50	0	50	107	19	0	13	58	32	0	486	1973
5:30 PM	7	36	16	0	22	62	53	0	42	102	24	0	18	52	17	0	451	1978
5:45 PM	8	53	28	0	23	81	71	0	61	107	10	0	16	55	31	0	544	2033
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	24	132	84	0	84	252	276	0	300	516	88	0	68	272	112	0	2208	
Heavy Trucks	0	0	0	0	4	4	0	0	0	4	0	0	0	0	0	0	12	
Pedestrians		4				0				0				8			12	
Bicycles	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

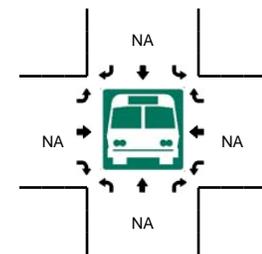
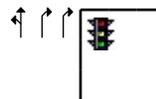
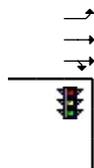
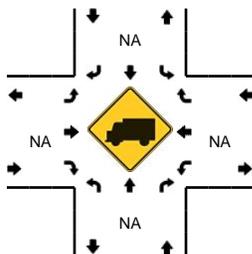
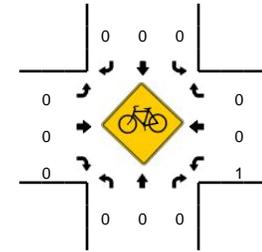
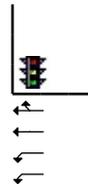
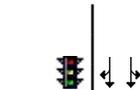
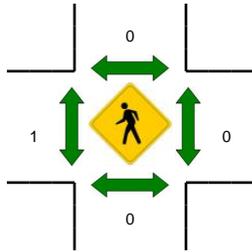
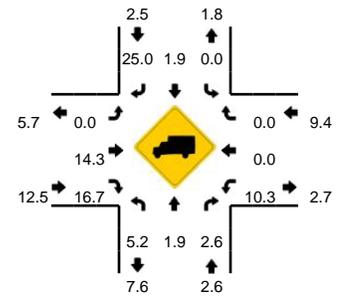
Comments:

LOCATION: Bateman Ave/Avenida Barbosa -- Buena Vista St
CITY/STATE: Irwindale, CA

QC JOB #: 13634409
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

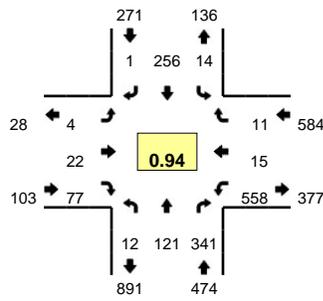


15-Min Count Period Beginning At	Bateman Ave/Avenida Barbosa (Northbound)				Bateman Ave/Avenida Barbosa (Southbound)				Buena Vista St (Eastbound)				Buena Vista St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	4	50	109	0	2	25	5	0	0	1	2	0	29	1	0	0	228	
7:15 AM	4	56	128	0	1	18	0	0	3	2	1	0	30	0	2	0	245	
7:30 AM	7	66	155	0	1	37	2	0	0	0	0	0	41	1	0	0	310	
7:45 AM	18	86	181	0	2	31	2	0	2	4	5	0	54	1	5	0	391	1174
8:00 AM	15	68	136	0	1	21	0	0	2	0	1	0	42	4	5	0	295	1241
8:15 AM	18	46	139	0	3	19	0	0	1	3	6	0	47	2	1	0	285	1281
8:30 AM	14	29	110	0	2	12	2	0	1	2	8	0	42	0	2	0	224	1195
8:45 AM	15	31	95	0	0	19	2	0	1	2	3	0	27	1	3	0	199	1003
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	72	344	724	0	8	124	8	0	8	16	20	0	216	4	20	0	1564	
Heavy Trucks	8	8	20		0	0	0		0	4	4		12	0	0		56	
Pedestrians	0	0	0		0	0	0		0	4	0		0	0	0		4	
Bicycles	0	0	0		0	0	0		0	0	0		1	0	0		1	
Railroad																		
Stopped Buses																		

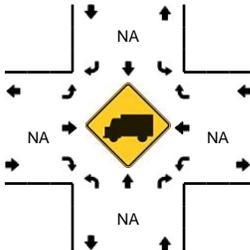
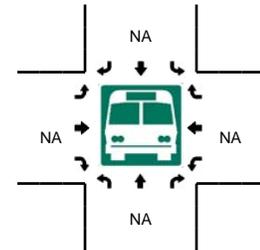
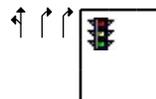
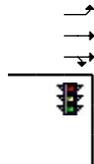
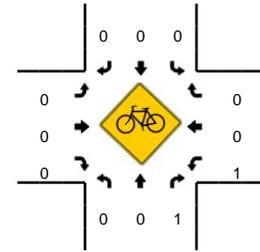
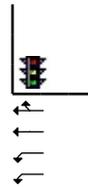
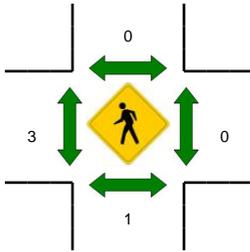
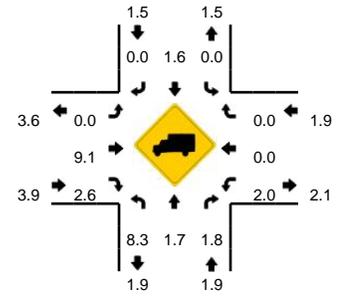
Comments:

LOCATION: Bateman Ave/Avenida Barbosa -- Buena Vista St
CITY/STATE: Irwindale, CA

QC JOB #: 13634410
DATE: Wed, Nov 18 2015



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

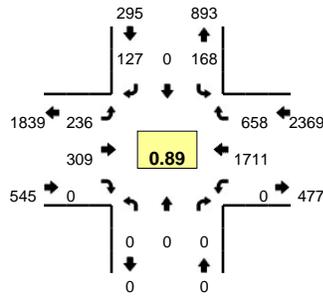


15-Min Count Period Beginning At	Bateman Ave/Avenida Barbosa (Northbound)				Bateman Ave/Avenida Barbosa (Southbound)				Buena Vista St (Eastbound)				Buena Vista St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	30	76	0	5	56	1	0	0	5	15	0	129	6	3	0	337	
4:15 PM	7	33	68	0	4	50	8	0	4	7	20	0	111	8	3	0	323	
4:30 PM	5	25	107	0	8	62	0	0	1	4	11	0	122	6	2	0	353	
4:45 PM	2	30	85	0	1	63	0	0	0	5	25	0	120	7	4	0	342	1355
5:00 PM	4	29	83	0	4	78	0	0	2	11	28	0	137	3	3	0	382	1400
5:15 PM	3	26	84	0	4	61	1	0	0	5	17	0	142	1	3	0	347	1424
5:30 PM	3	36	89	0	5	54	0	0	2	1	7	0	159	4	1	0	361	1432
5:45 PM	1	26	70	0	4	51	0	0	0	0	2	0	110	0	2	0	266	1356
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	116	332	0	16	312	0	0	8	44	112	0	548	12	12	0	1528	
Heavy Trucks	0	4	0		0	4	0		0	4	4		12	0	0		28	
Pedestrians		0				0				4				0				4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0			0
Railroad																		
Stopped Buses																		

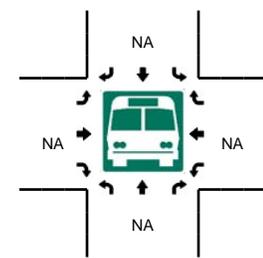
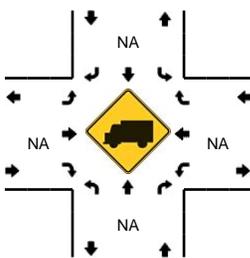
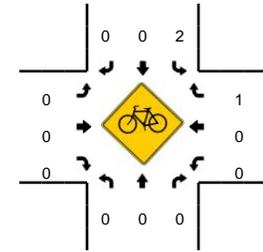
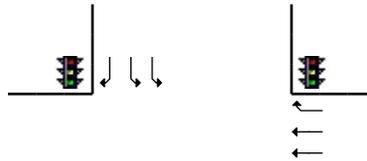
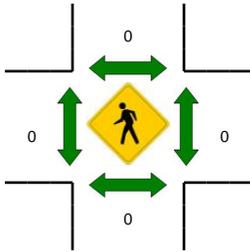
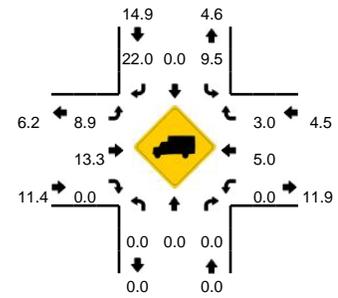
Comments:

LOCATION: Avenida Barbosa -- Arrow Hwy
CITY/STATE: Irwindale, CA

QC JOB #: 13634411
DATE: Wed, Nov 18 2015



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

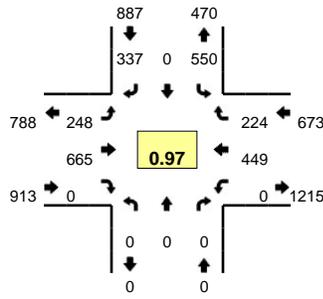


15-Min Count Period Beginning At	Avenida Barbosa (Northbound)				Avenida Barbosa (Southbound)				Arrow Hwy (Eastbound)				Arrow Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	28	0	34	0	44	50	0	0	0	437	126	0	719	
7:15 AM	0	0	0	0	22	0	29	0	57	81	0	0	0	470	136	0	795	
7:30 AM	0	0	0	0	46	0	31	0	65	89	0	1	0	483	183	0	898	
7:45 AM	0	0	0	0	72	0	33	0	69	89	0	0	0	321	213	0	797	3209
8:00 AM	0	0	0	0	29	0	38	0	55	77	0	0	0	349	166	0	714	3204
8:15 AM	0	0	0	0	50	0	30	0	69	86	0	0	0	365	143	0	743	3152
8:30 AM	0	0	0	0	30	0	32	0	44	97	0	1	0	334	119	0	657	2911
8:45 AM	0	0	0	0	33	0	27	0	60	75	0	0	0	268	83	0	546	2660
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	184	0	124	0	260	356	0	4	0	1932	732	0	3592	
Heavy Trucks	0	0	0	0	8	0	44	0	12	40	0	0	0	64	20	0	188	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

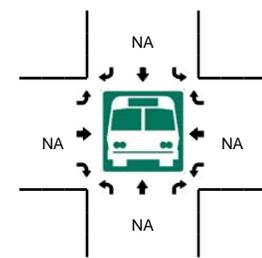
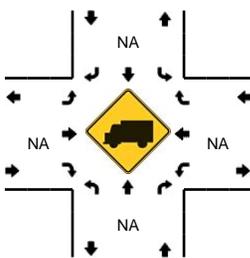
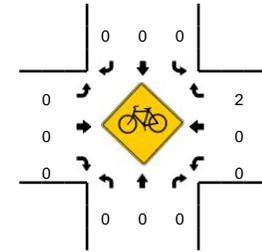
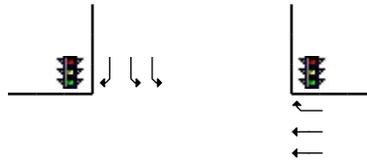
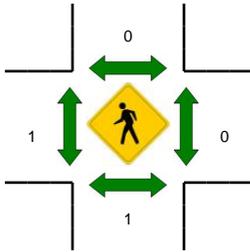
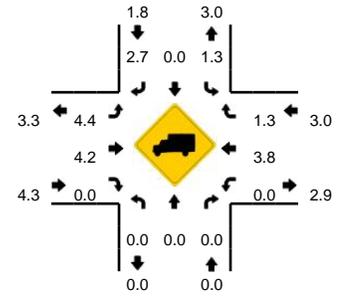
Comments:

LOCATION: Avenida Barbosa -- Arrow Hwy
CITY/STATE: Irwindale, CA

QC JOB #: 13634412
DATE: Wed, Nov 18 2015



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

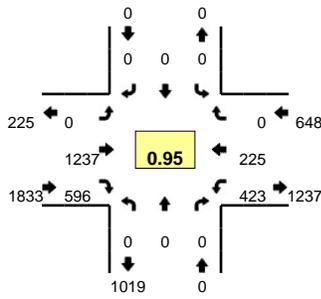


15-Min Count Period Beginning At	Avenida Barbosa (Northbound)				Avenida Barbosa (Southbound)				Arrow Hwy (Eastbound)				Arrow Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	120	0	92	0	66	169	0	1	0	111	56	0	615	
4:15 PM	0	0	0	0	120	0	76	0	56	200	0	0	0	92	57	0	601	
4:30 PM	0	0	0	0	144	0	65	0	82	174	0	0	0	81	53	0	599	
4:45 PM	0	0	0	0	127	0	76	0	63	155	0	0	0	108	57	0	586	2401
5:00 PM	0	0	0	0	144	0	103	0	52	173	0	1	0	108	57	0	638	2424
5:15 PM	0	0	0	0	143	0	73	0	60	168	0	1	0	121	56	0	622	2445
5:30 PM	0	0	0	0	136	0	85	0	71	169	0	0	0	112	54	0	627	2473
5:45 PM	0	0	0	0	95	0	72	0	56	176	0	0	0	111	37	0	547	2434
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	576	0	412	0	208	692	0	4	0	432	228	0	2552	
Heavy Trucks	0	0	0	0	4	0	0	0	16	36	0	0	0	32	0	0	88	
Pedestrians		4				0				4				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																	0	
Stopped Buses																		

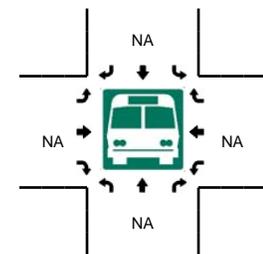
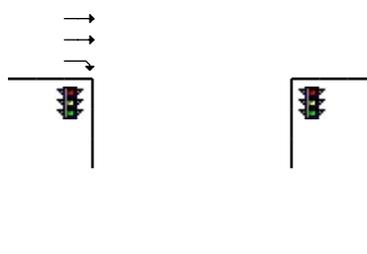
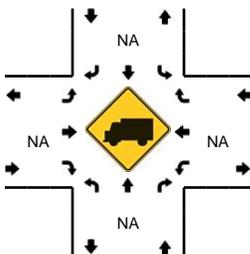
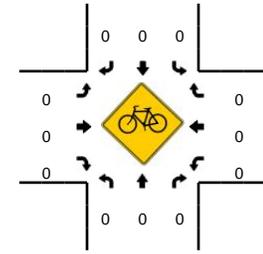
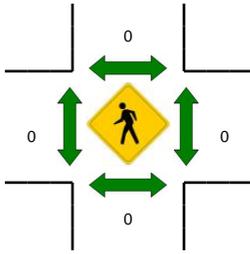
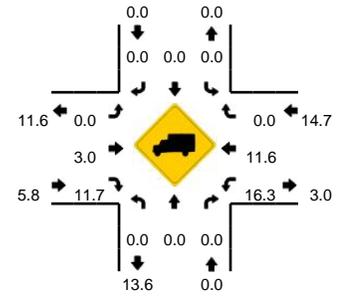
Comments:

LOCATION: I-605 Southbound On-Ramp -- Live Oak Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634413
DATE: Thu, Dec 10 2015



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

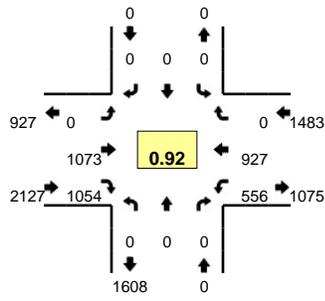


15-Min Count Period Beginning At	I-605 Southbound On-Ramp (Northbound)				I-605 Southbound On-Ramp (Southbound)				Live Oak Ave (Eastbound)				Live Oak Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	102	163	0	102	26	0	0	393	
7:15 AM	0	0	0	0	0	0	0	0	0	197	192	0	94	33	0	0	516	
7:30 AM	0	0	0	0	0	0	0	0	0	253	228	0	108	26	0	0	615	
7:45 AM	0	0	0	0	0	0	0	0	0	297	184	0	116	52	0	0	649	2173
8:00 AM	0	0	0	0	0	0	0	0	0	287	163	0	115	52	0	0	617	2397
8:15 AM	0	0	0	0	0	0	0	0	0	286	125	0	97	51	0	0	559	2440
8:30 AM	0	0	0	0	0	0	0	0	0	367	124	0	95	70	0	0	656	2481
8:45 AM	0	0	0	0	0	0	0	0	0	341	83	1	85	90	0	0	600	2432
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	0	0	0	1468	496	0	380	280	0	0	2624	
Heavy Trucks	0	0	0	0	0	0	0	0	0	56	100	0	40	36	0	0	232	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

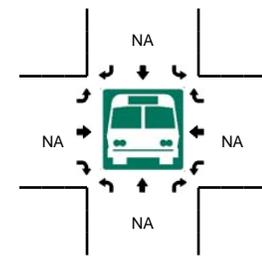
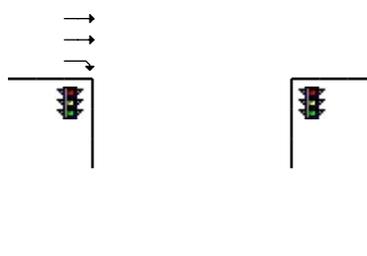
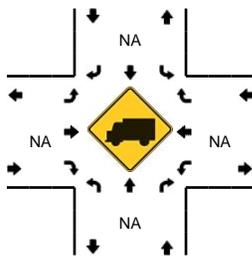
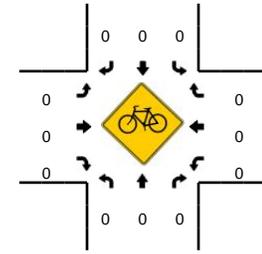
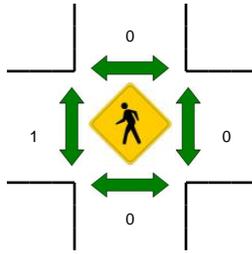
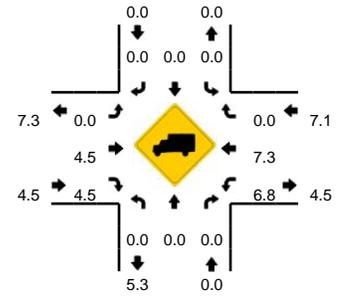
Comments:

LOCATION: I-605 Southbound On-Ramp -- Live Oak Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634414
DATE: Thu, Dec 10 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

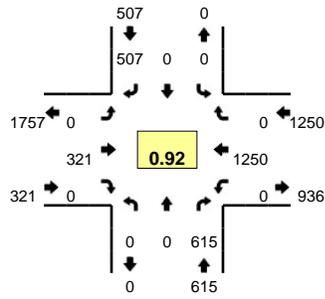


15-Min Count Period Beginning At	I-605 Southbound On-Ramp (Northbound)				I-605 Southbound On-Ramp (Southbound)				Live Oak Ave (Eastbound)				Live Oak Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	259	213	0	111	175	0	1	759	
4:15 PM	0	0	0	0	0	0	0	0	0	237	217	0	118	169	0	0	741	
4:30 PM	0	0	0	0	0	0	0	0	0	246	232	0	135	184	0	0	797	
4:45 PM	0	0	0	0	0	0	0	0	0	236	217	0	140	190	0	0	783	3080
5:00 PM	0	0	0	0	0	0	0	0	0	218	248	0	145	224	0	0	835	3156
5:15 PM	0	0	0	0	0	0	0	0	0	264	249	0	123	227	0	0	863	3278
5:30 PM	0	0	0	0	0	0	0	0	0	306	288	0	141	242	0	0	977	3458
5:45 PM	0	0	0	0	0	0	0	0	0	285	269	0	145	234	0	2	935	3610
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	0	0	0	0	0	0	0	0	0	1224	1152	0	564	968	0	0	3908	
Heavy Trucks	0	0	0	0	0	0	0	0	0	48	52	0	24	44	0	0	168	
Pedestrians	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

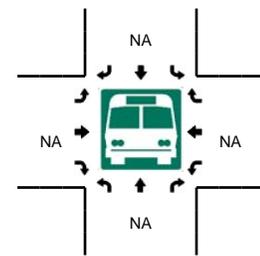
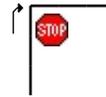
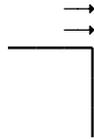
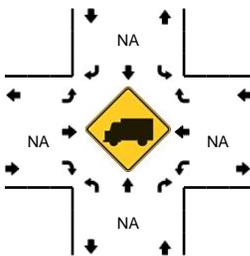
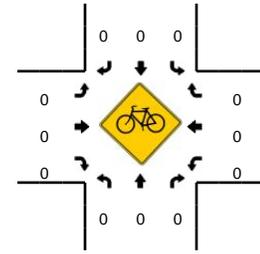
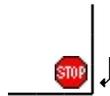
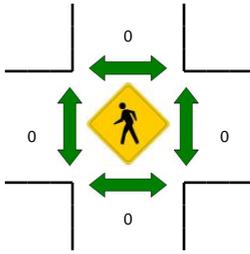
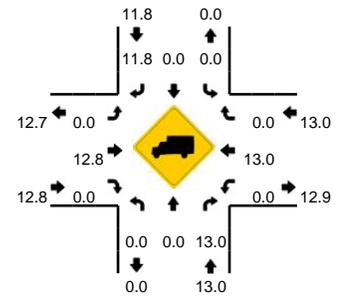
Comments:

LOCATION: I-605 Northbound Off-Ramp -- Live Oak Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634415
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

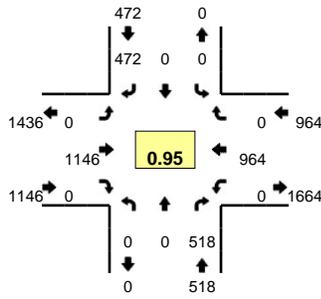


15-Min Count Period Beginning At	I-605 Northbound Off-Ramp (Northbound)				I-605 Northbound Off-Ramp (Southbound)				Live Oak Ave (Eastbound)				Live Oak Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	107	0	0	0	117	0	0	60	0	0	0	333	0	0	617	
7:15 AM	0	0	128	0	0	0	113	0	0	50	0	0	0	377	0	0	668	
7:30 AM	0	0	166	0	0	0	121	0	0	63	0	0	0	381	0	0	731	
7:45 AM	0	0	159	0	0	0	139	0	0	120	0	0	0	246	0	0	664	2680
8:00 AM	0	0	162	0	0	0	134	0	0	88	0	0	0	246	0	0	630	2693
8:15 AM	0	0	143	0	0	0	117	0	0	86	0	0	0	291	0	0	637	2662
8:30 AM	0	0	148	0	0	0	129	0	0	83	0	0	0	254	0	0	614	2545
8:45 AM	0	0	166	0	0	0	124	0	0	73	0	0	0	231	0	0	594	2475
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	664	0	0	0	484	0	0	252	0	0	0	1524	0	0	2924	
Heavy Trucks	0	0	60	0	0	0	44	0	0	32	0	0	0	128	0	0	264	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

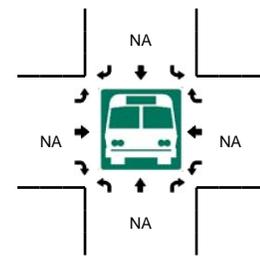
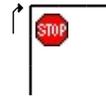
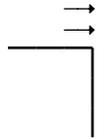
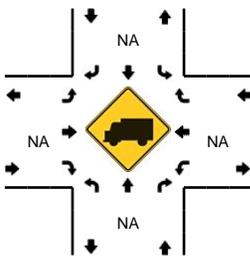
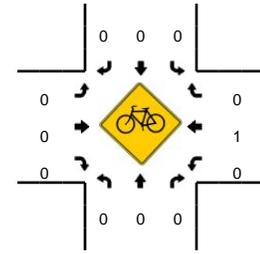
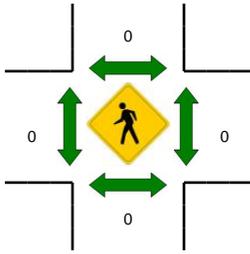
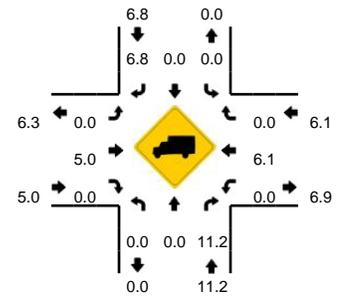
Comments:

LOCATION: I-605 Northbound Off-Ramp -- Live Oak Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634416
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



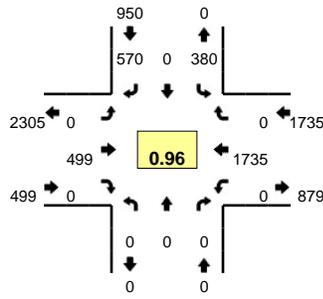
15-Min Count Period Beginning At	I-605 Northbound Off-Ramp (Northbound)				I-605 Northbound Off-Ramp (Southbound)				Live Oak Ave (Eastbound)				Live Oak Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	133	0	0	0	111	0	0	301	0	0	0	191	0	0	736	
4:15 PM	0	0	132	0	0	0	132	0	0	314	0	0	0	189	0	0	767	
4:30 PM	0	0	130	0	0	0	116	0	0	307	0	0	0	219	0	0	772	
4:45 PM	0	0	140	0	0	0	111	0	0	273	0	0	0	217	0	0	741	3016
5:00 PM	0	0	142	0	0	0	110	0	0	293	0	0	0	269	0	0	814	3094
5:15 PM	0	0	106	0	0	0	135	0	0	273	0	0	0	259	0	0	773	3100
5:30 PM	0	0	133	0	0	0	132	0	0	293	0	0	0	180	0	0	738	3066
5:45 PM	0	0	149	0	0	0	145	0	0	268	0	0	0	194	0	0	756	3081

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	568	0	0	0	440	0	0	1172	0	0	0	1076	0	0	3256
Heavy Trucks	0	0	72		0	0	40		0	48	0		0	40	0		200
Pedestrians	0				0				0				0				0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	0
Stopped Buses																	0

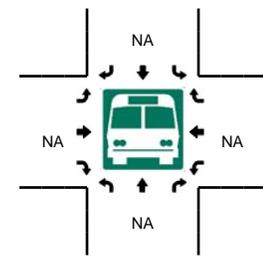
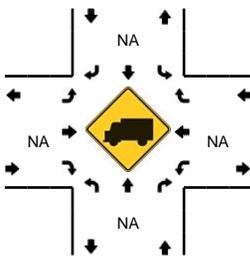
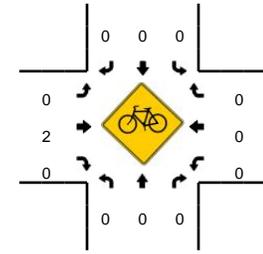
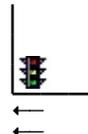
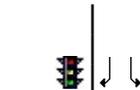
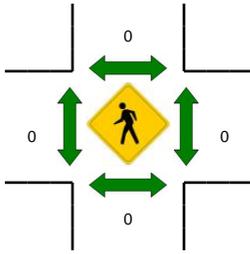
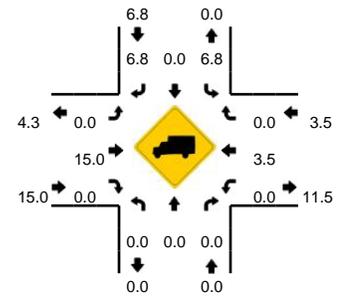
Comments:

LOCATION: I-605 Southbound Off-Ramp -- Arrow Hwy
CITY/STATE: Los Angeles, CA

QC JOB #: 13634417
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

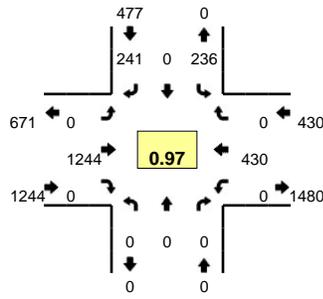


15-Min Count Period Beginning At	I-605 Southbound Off-Ramp (Northbound)				I-605 Southbound Off-Ramp (Southbound)				Arrow Hwy (Eastbound)				Arrow Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	72	0	104	0	0	76	0	0	0	471	0	0	723	
7:15 AM	0	0	0	0	70	0	124	0	0	101	0	0	0	485	0	0	780	
7:30 AM	0	0	0	0	75	0	149	0	0	131	0	0	0	471	0	0	826	
7:45 AM	0	0	0	0	110	0	149	0	0	151	0	0	0	398	0	0	808	3137
8:00 AM	0	0	0	0	125	0	148	0	0	116	0	0	0	381	0	0	770	3184
8:15 AM	0	0	0	0	106	0	162	0	0	133	0	0	0	339	0	0	740	3144
8:30 AM	0	0	0	0	99	0	161	0	0	135	0	0	0	280	0	0	675	2993
8:45 AM	0	0	0	0	98	0	151	0	0	116	0	0	0	225	0	0	590	2775
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	300	0	596	0	0	524	0	0	0	1884	0	0	3304	
Heavy Trucks	0	0	0	0	28	0	24	0	0	32	0	0	0	48	0	0	132	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

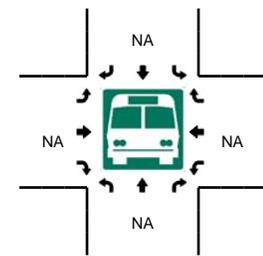
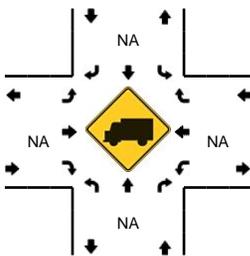
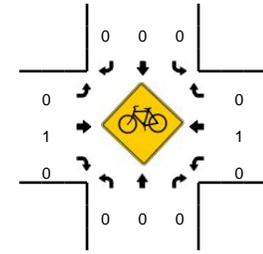
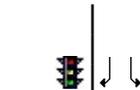
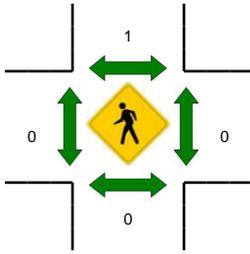
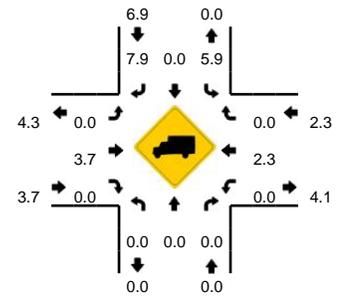
Comments:

LOCATION: I-605 Southbound Off-Ramp -- Arrow Hwy
CITY/STATE: Los Angeles, CA

QC JOB #: 13634418
DATE: Wed, Nov 18 2015



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

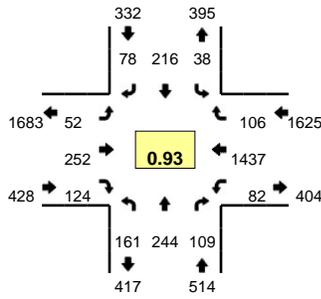


15-Min Count Period Beginning At	I-605 Southbound Off-Ramp (Northbound)				I-605 Southbound Off-Ramp (Southbound)				Arrow Hwy (Eastbound)				Arrow Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	95	0	49	0	0	273	0	0	0	112	0	0	529	
4:15 PM	0	0	0	0	81	0	63	0	0	313	0	0	0	82	0	0	539	
4:30 PM	0	0	0	0	63	0	42	0	0	321	0	0	0	97	0	0	523	
4:45 PM	0	0	0	0	61	0	63	0	0	279	0	0	0	103	0	0	506	2097
5:00 PM	0	0	0	0	69	0	41	0	0	325	0	0	0	122	0	0	557	2125
5:15 PM	0	0	0	0	55	0	70	0	0	323	0	0	0	109	0	0	557	2143
5:30 PM	0	0	0	0	51	0	67	0	0	317	0	0	0	96	0	0	531	2151
5:45 PM	0	0	0	0	58	0	76	0	0	287	0	0	0	82	0	0	503	2148
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	276	0	164	0	0	1300	0	0	0	488	0	0	2228	
Heavy Trucks	0	0	0	0	24	0	12	0	0	44	0	0	0	12	0	0	92	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

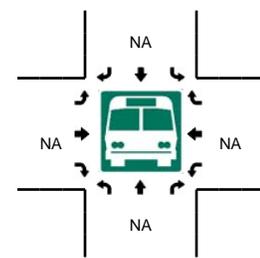
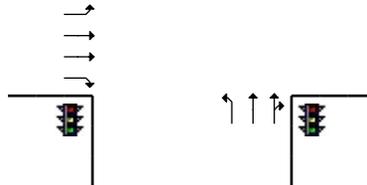
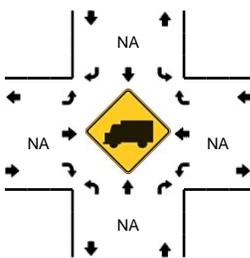
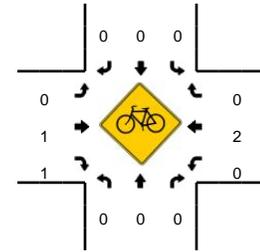
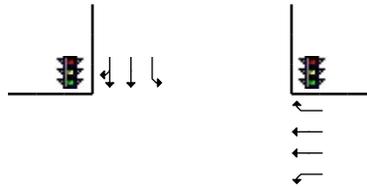
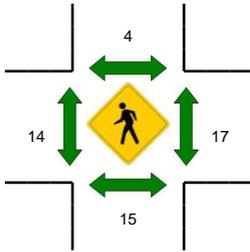
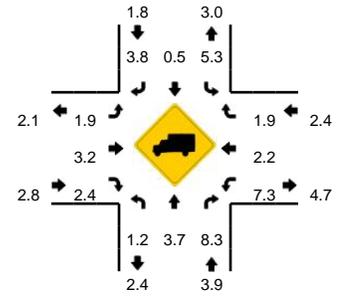
Comments:

LOCATION: Buena Vista St -- Huntington Dr
CITY/STATE: Duarte, CA

QC JOB #: 13634419
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

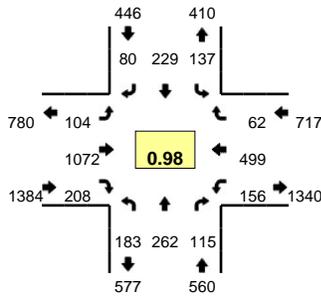


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Huntington Dr (Eastbound)				Huntington Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	28	42	6	0	5	37	15	0	14	48	22	3	15	399	23	2	659	
7:15 AM	35	56	8	0	8	64	21	0	9	42	27	2	15	347	30	1	665	
7:30 AM	44	51	22	0	10	59	14	0	8	56	39	0	14	431	31	0	779	
7:45 AM	42	72	41	0	9	62	23	0	12	66	30	3	17	326	19	1	723	2826
8:00 AM	41	61	25	0	8	37	20	0	9	62	27	2	27	346	21	2	688	2855
8:15 AM	34	60	21	0	11	58	21	0	16	68	28	2	19	334	35	2	709	2899
8:30 AM	45	55	11	0	10	38	14	0	16	76	34	3	19	329	22	1	673	2793
8:45 AM	55	66	27	0	7	50	17	1	26	77	23	2	15	314	28	1	709	2779
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	176	204	88	0	40	236	56	0	32	224	156	0	56	1724	124	0	3116	
Heavy Trucks	4	4	4		0	0	0		0	12	0		4	36	0		64	
Pedestrians		12				0				8				28			48	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

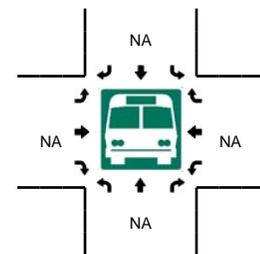
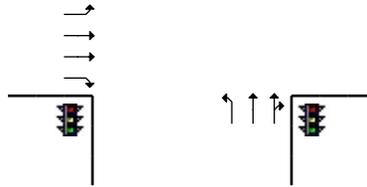
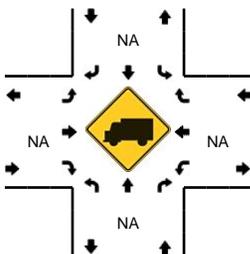
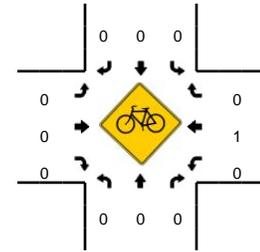
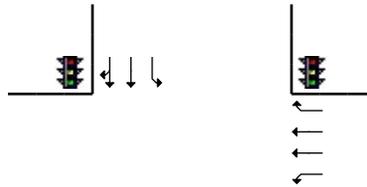
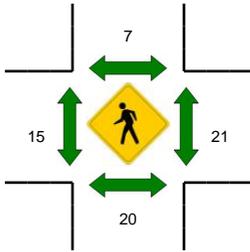
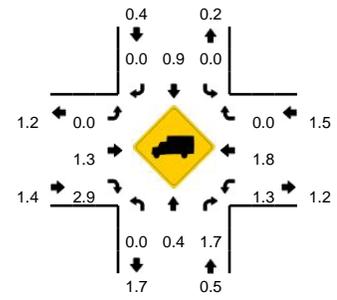
Comments:

LOCATION: Buena Vista St -- Huntington Dr
CITY/STATE: Duarte, CA

QC JOB #: 13634420
DATE: Wed, Nov 18 2015



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

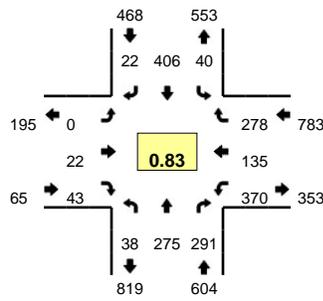


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Huntington Dr (Eastbound)				Huntington Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	21	48	29	0	23	41	11	0	19	271	44	2	35	127	16	3	690	
4:15 PM	31	52	57	0	32	47	12	0	20	248	35	3	35	124	13	3	712	
4:30 PM	32	53	26	0	15	53	17	0	30	250	47	1	51	136	17	4	732	
4:45 PM	45	70	28	0	37	53	16	0	19	262	49	3	32	126	13	6	759	2893
5:00 PM	42	67	26	0	35	63	19	0	22	275	58	3	39	115	19	4	787	2990
5:15 PM	49	63	33	0	42	62	25	0	17	273	41	9	33	126	18	0	791	3069
5:30 PM	47	62	28	0	23	51	20	0	28	262	60	3	36	132	12	6	770	3107
5:45 PM	57	55	25	0	35	41	24	0	22	257	48	6	26	129	11	4	740	3088
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	196	252	132	0	168	248	100	0	68	1092	164	36	132	504	72	0	3164	
Heavy Trucks	0	0	0	0	0	8	0	0	0	12	4	0	0	4	0	0	28	
Pedestrians		8				0				0				8			16	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

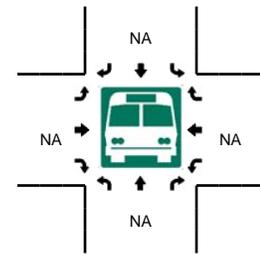
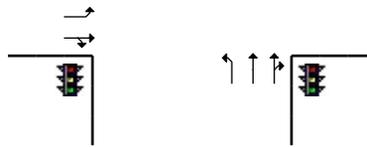
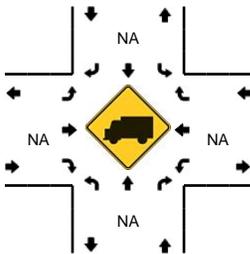
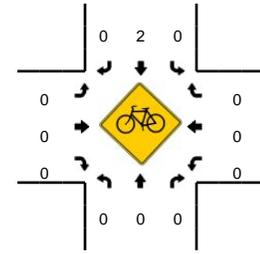
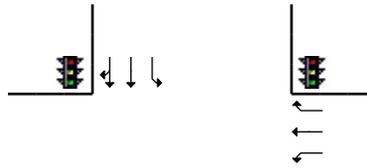
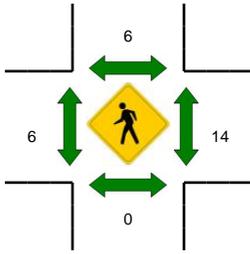
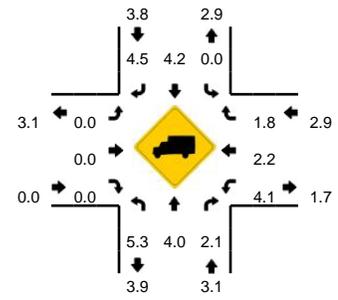
Comments:

LOCATION: Buena Vista St -- Central Ave (North)
CITY/STATE: Los Angeles, CA

QC JOB #: 13634421
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

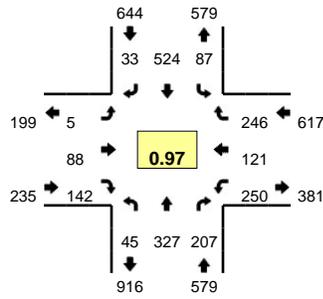


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Central Ave (North) (Eastbound)				Central Ave (North) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	43	26	0	3	100	3	0	0	2	10	0	70	18	41	0	321	
7:15 AM	5	46	48	0	11	96	8	0	0	4	10	0	83	19	53	0	383	
7:30 AM	6	66	100	0	12	116	5	0	0	3	7	0	103	35	70	0	523	
7:45 AM	15	82	112	0	13	105	6	0	0	7	10	0	99	42	84	0	575	1802
8:00 AM	12	81	31	0	4	89	3	0	0	8	16	0	85	39	71	0	439	1920
8:15 AM	18	66	28	0	7	116	2	0	0	4	18	0	45	24	53	0	381	1918
8:30 AM	12	69	25	0	7	108	3	0	0	4	2	0	75	17	57	0	379	1774
8:45 AM	15	83	34	1	4	84	4	0	0	2	12	0	83	27	72	0	421	1620
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	60	328	448	0	52	420	24	0	0	28	40	0	396	168	336	0	2300	
Heavy Trucks	4	16	8		0	4	4		0	0	0		20	0	4		60	
Pedestrians	0	0	0		0	8	0		0	8	0		20	0	0		36	
Bicycles	0	0	0		0	1	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

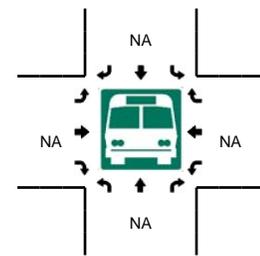
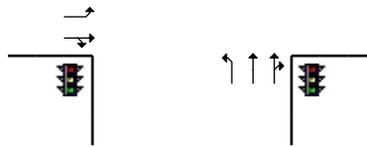
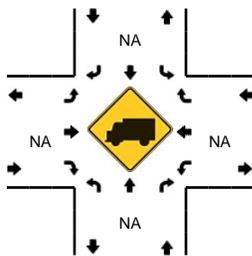
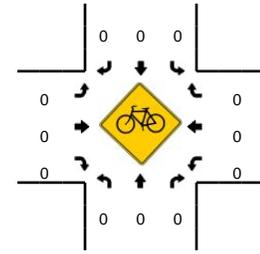
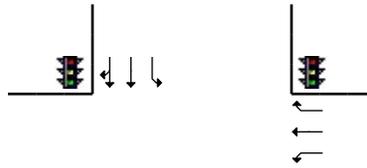
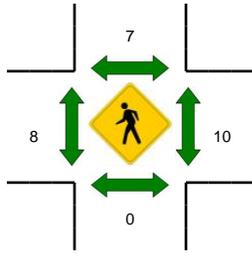
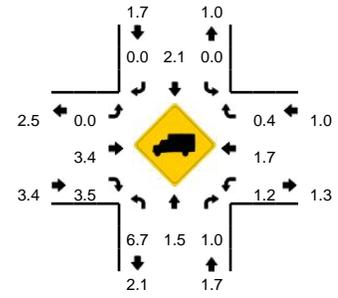
Comments:

LOCATION: Buena Vista St -- Central Ave (North)
CITY/STATE: Los Angeles, CA

QC JOB #: 13634422
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

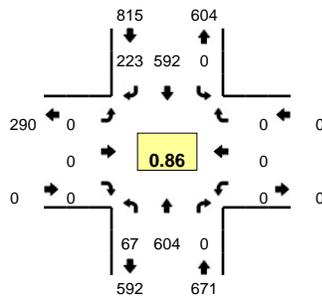


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Central Ave (North) (Eastbound)				Central Ave (North) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	75	54	0	15	107	8	0	0	17	27	0	65	18	49	0	450	
4:15 PM	6	91	50	0	21	113	11	0	2	15	22	0	65	22	55	0	473	
4:30 PM	9	79	53	0	19	128	8	0	1	17	39	0	73	22	48	0	496	
4:45 PM	15	84	48	0	17	121	12	0	3	31	25	0	67	36	67	0	526	1945
5:00 PM	11	68	56	0	30	148	5	0	1	17	43	0	54	26	75	0	534	2029
5:15 PM	10	96	50	0	20	127	8	1	0	23	35	0	56	37	56	0	519	2075
5:30 PM	13	96	46	0	11	133	5	0	2	17	23	0	61	21	58	0	486	2065
5:45 PM	13	80	46	0	23	123	3	0	2	15	27	0	70	10	68	0	480	2019
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	44	272	224	0	120	592	20	0	4	68	172	0	216	104	300	0	2136	
Heavy Trucks	8	16	4		0	12	0		0	4	8		0	0	4		56	
Pedestrians		0				8				4				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

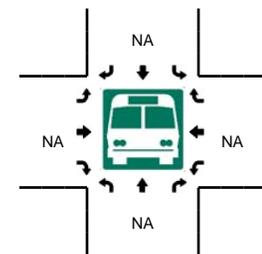
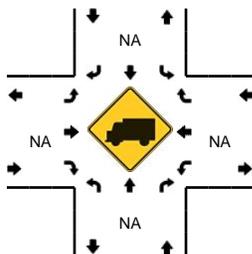
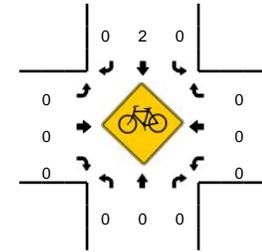
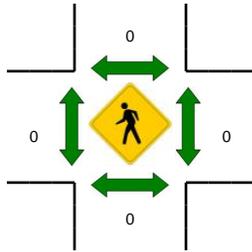
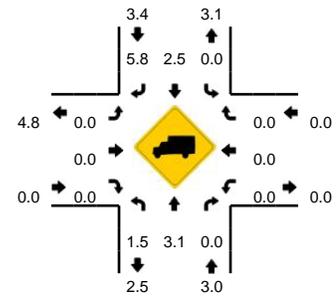
Comments:

LOCATION: Buena Vista St -- Central Ave (South)
CITY/STATE: Los Angeles, CA

QC JOB #: 13634423
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

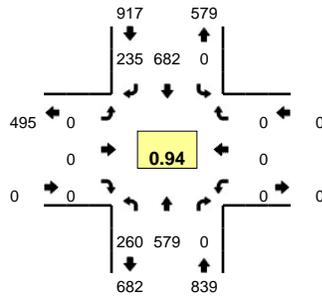


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Central Ave (South) (Eastbound)				Central Ave (South) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	35	74	0	0	0	110	69	0	0	0	0	0	0	0	0	0	288	
7:15 AM	21	99	0	0	0	138	51	0	0	0	0	0	0	0	0	0	309	
7:30 AM	15	172	0	0	0	154	72	0	0	0	0	0	0	0	0	0	413	
7:45 AM	12	209	0	0	0	167	45	0	0	0	0	0	0	0	0	0	433	1443
8:00 AM	19	124	0	0	0	133	55	0	0	0	0	0	0	0	0	0	331	1486
8:15 AM	15	112	0	0	0	147	31	0	0	0	0	0	0	0	0	0	305	1482
8:30 AM	28	106	0	0	0	154	31	0	0	0	0	0	0	0	0	0	319	1388
8:45 AM	18	132	0	0	0	143	35	0	0	0	0	0	0	0	0	0	328	1283
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	48	836	0	0	0	668	180	0	0	0	0	0	0	0	0	0		1732
Heavy Trucks	0	28	0	0	0	0	16	0	0	0	0	0	0	0	0	0	44	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

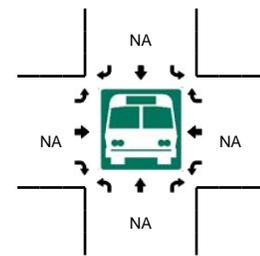
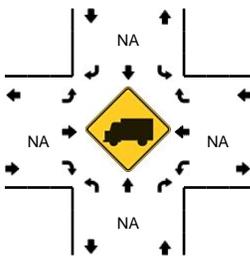
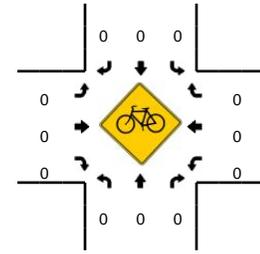
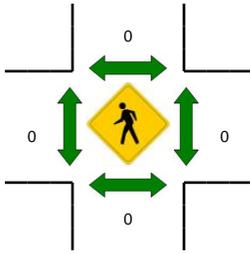
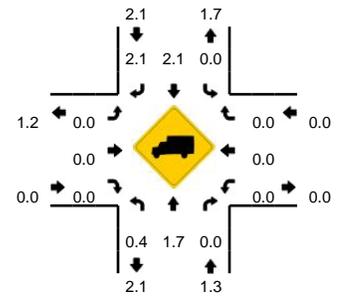
Comments:

LOCATION: Buena Vista St -- Central Ave (South)
CITY/STATE: Los Angeles, CA

QC JOB #: 13634424
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

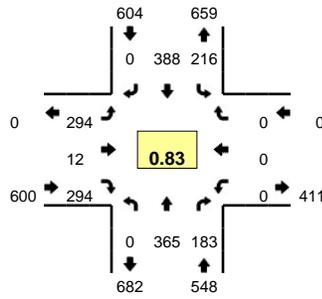


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Central Ave (South) (Eastbound)				Central Ave (South) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	52	144	0	0	0	126	73	0	0	0	0	0	0	0	0	0	395	
4:15 PM	41	147	0	0	0	161	39	0	0	0	0	0	0	0	0	0	388	
4:30 PM	54	141	0	0	0	167	74	0	0	0	0	0	0	0	0	0	436	
4:45 PM	65	147	0	0	0	158	55	0	0	0	0	0	0	0	0	0	425	1644
5:00 PM	86	135	0	0	0	188	57	0	0	0	0	0	0	0	0	0	466	1715
5:15 PM	55	156	0	0	0	169	49	0	0	0	0	0	0	0	0	0	429	1756
5:30 PM	59	155	0	0	0	160	57	0	0	0	0	0	0	0	0	0	431	1751
5:45 PM	50	139	0	0	0	158	62	0	0	0	0	0	0	0	0	0	409	1735
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	344	540	0	0	0	752	228	0	0	0	0	0	0	0	0	0		1864
Heavy Trucks	0	28	0	0	0	16	4	0	0	0	0	0	0	0	0	0	48	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

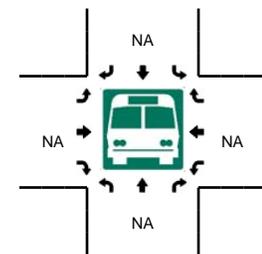
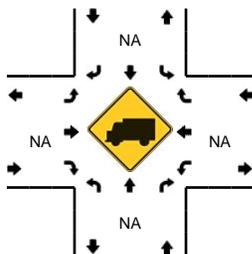
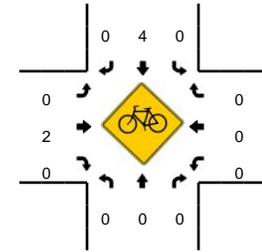
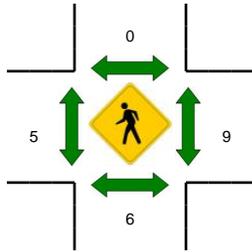
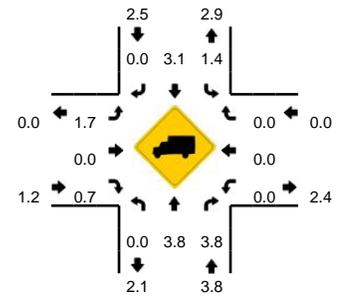
Comments:

LOCATION: Buena Vista St -- Evergreen St
CITY/STATE: Los Angeles, CA

QC JOB #: 13634425
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

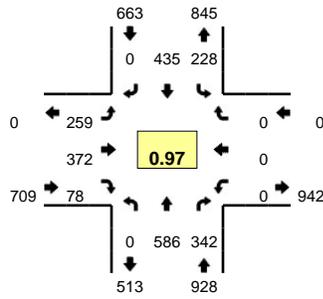


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	73	28	0	55	50	0	0	40	6	54	0	0	0	0	0	306	
7:15 AM	0	73	29	0	67	68	0	0	45	3	72	0	0	0	0	0	357	
7:30 AM	0	98	48	0	58	87	0	0	85	6	61	0	0	0	0	0	443	
7:45 AM	0	124	59	0	62	108	0	0	95	2	77	0	0	0	0	0	527	1633
8:00 AM	0	79	41	0	40	101	0	0	53	2	78	0	0	0	0	0	394	1721
8:15 AM	0	64	35	0	56	92	0	0	61	2	78	0	0	0	0	0	388	1752
8:30 AM	0	82	42	0	40	108	0	0	51	0	58	0	0	0	0	0	381	1690
8:45 AM	0	83	33	0	44	97	0	0	75	0	70	0	0	0	0	0	402	1565
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	496	236	0	248	432	0	0	380	8	308	0	0	0	0	0	2108	
Heavy Trucks	0	24	8		0	8	0		4	0	0		0	0	0		44	
Pedestrians		8				0				8			12				28	
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1	
Railroad																		
Stopped Buses																		

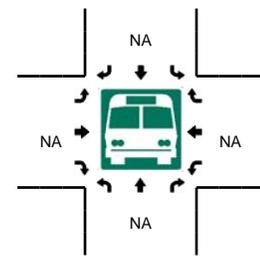
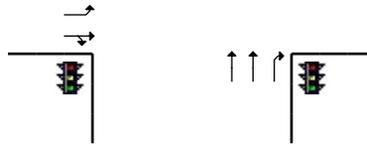
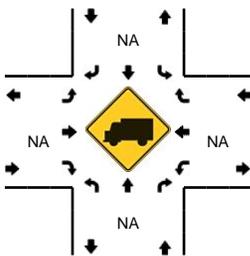
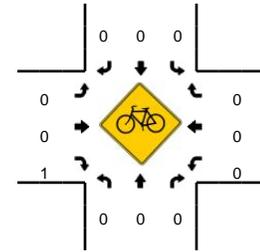
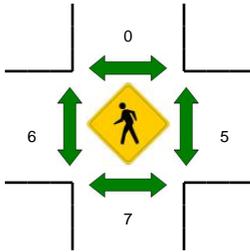
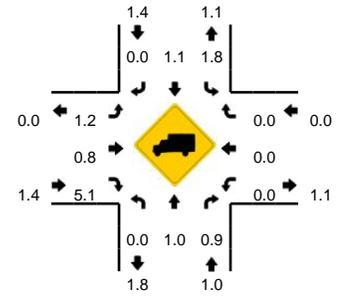
Comments:

LOCATION: Buena Vista St -- Evergreen St
CITY/STATE: Los Angeles, CA

QC JOB #: 13634426
DATE: Wed, Nov 18 2015



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

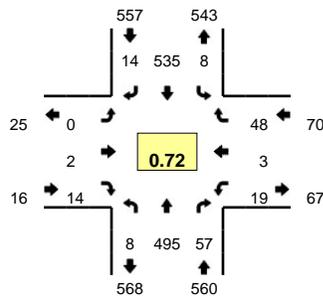


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	113	73	0	44	84	0	0	73	60	39	0	0	0	0	0	486	
4:15 PM	0	107	67	0	47	109	0	0	78	80	34	0	0	0	0	0	522	
4:30 PM	0	125	100	0	73	83	0	0	71	83	20	0	0	0	0	0	555	
4:45 PM	0	164	98	0	57	98	0	0	59	81	20	0	0	0	0	0	577	2140
5:00 PM	0	140	83	0	68	118	0	0	66	101	18	0	0	0	0	0	594	2248
5:15 PM	0	134	82	0	52	104	0	0	69	99	13	0	0	0	0	0	553	2279
5:30 PM	0	148	79	0	51	115	0	0	65	91	27	0	0	0	0	0	576	2300
5:45 PM	0	125	87	0	60	95	0	0	72	95	29	0	0	0	0	0	563	2286
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	560	332	0	272	472	0	0	264	404	72	0	0	0	0	0	2376	
Heavy Trucks	0	16	0		0	8	0		8	4	4		0	0	0		40	
Pedestrians		0				0				0				4			4	
Bicycles	0	0	0		0	0	0		0	0	1		0	0	0		1	
Railroad																		
Stopped Buses																		

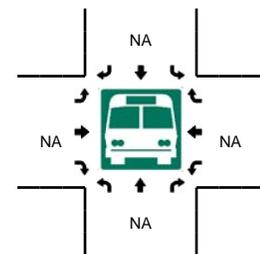
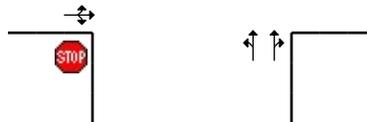
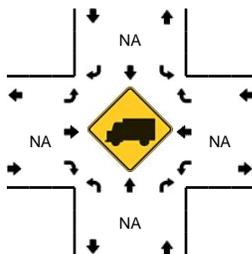
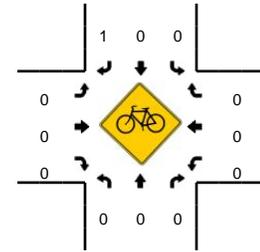
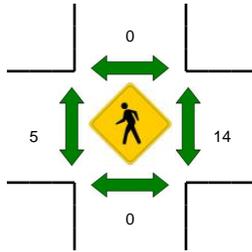
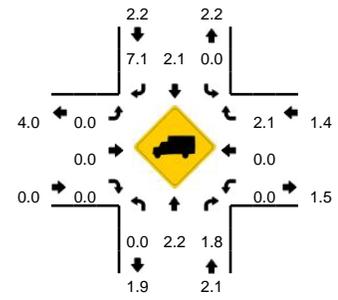
Comments:

LOCATION: Buena Vista St -- 3 Ranch Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634427
DATE: Thu, Dec 10 2015



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



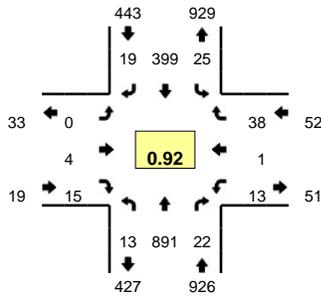
15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				3 Ranch Rd (Eastbound)				3 Ranch Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	38	1	0	0	30	1	0	0	0	2	0	2	0	5	0	79	
7:15 AM	0	42	1	0	3	44	2	0	1	0	4	0	2	0	2	0	101	
7:30 AM	4	72	1	0	1	79	0	0	3	0	2	0	3	0	8	0	173	
7:45 AM	0	102	4	0	2	101	4	1	1	0	1	0	1	0	8	0	225	578
8:00 AM	2	102	5	0	0	103	5	0	0	1	4	0	1	0	8	0	231	730
8:15 AM	1	100	7	0	5	111	3	0	0	0	3	0	3	2	14	0	249	878
8:30 AM	3	125	20	0	1	132	3	0	0	0	3	0	5	0	15	0	307	1012
8:45 AM	2	168	25	0	2	189	3	0	0	1	4	0	10	1	11	0	416	1203

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	672	100	0	8	756	12	0	0	4	16	0	40	4	44	0	1664
Heavy Trucks	0	4	0	0	0	20	4	0	0	0	0	0	0	0	0	0	28
Pedestrians	0	0	0	0	0	0	0	0	0	8	0	0	0	20	0	0	28
Bicycles	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Railroad																	
Stopped Buses																	

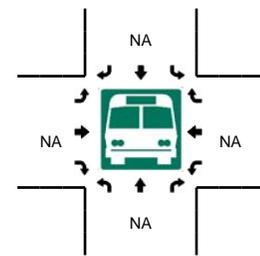
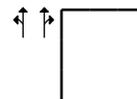
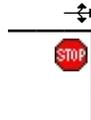
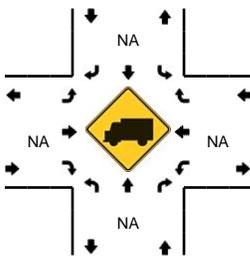
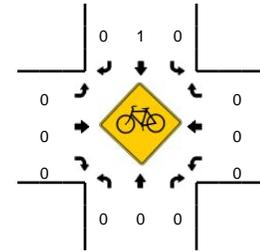
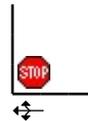
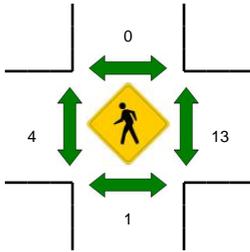
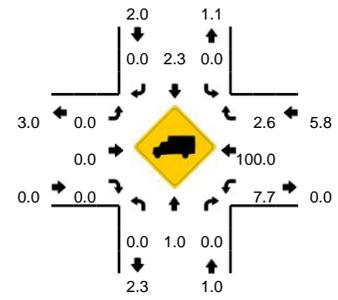
Comments:

LOCATION: Buena Vista St -- 3 Ranch Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634428
DATE: Thu, Dec 10 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM



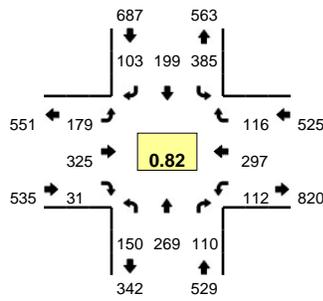
15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				3 Ranch Rd (Eastbound)				3 Ranch Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	177	6	0	6	133	3	1	1	0	3	0	4	0	11	0	346	
4:15 PM	5	132	6	1	5	118	10	1	3	0	4	0	6	0	4	0	295	
4:30 PM	2	195	4	0	5	102	2	0	2	1	9	0	3	1	2	0	328	
4:45 PM	3	181	6	0	4	97	6	0	2	0	7	0	2	0	7	0	315	1284
5:00 PM	1	225	7	0	4	107	3	0	0	3	3	0	2	0	14	0	369	1307
5:15 PM	3	191	4	0	9	97	6	0	0	0	2	0	6	0	6	0	324	1336
5:30 PM	3	223	5	0	8	94	3	0	0	0	8	0	3	1	9	0	357	1365
5:45 PM	6	252	6	0	4	101	7	0	0	1	2	0	2	0	9	0	390	1440

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	1008	24	0	16	404	28	0	0	4	8	0	8	0	36	0	1560
Heavy Trucks	0	16	0		0	8	0		0	0	0		0	0	0		24
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	0
Stopped Buses																	0

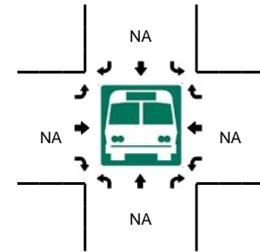
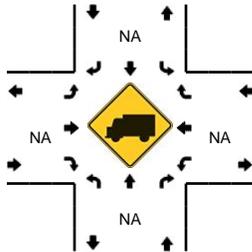
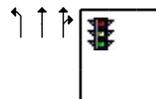
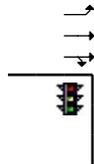
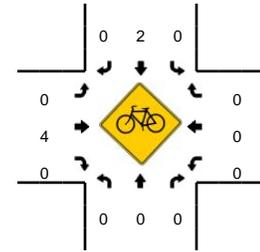
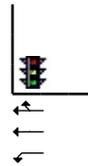
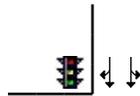
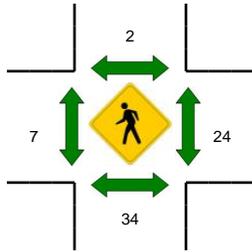
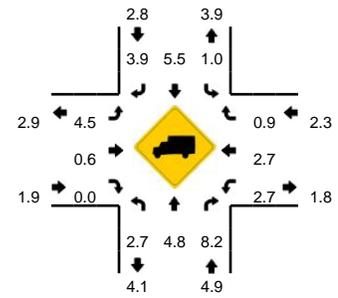
Comments:

LOCATION: Buena Vista St -- Duarte Rd
CITY/STATE: Duarte, CA

QC JOB #: 13634429
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

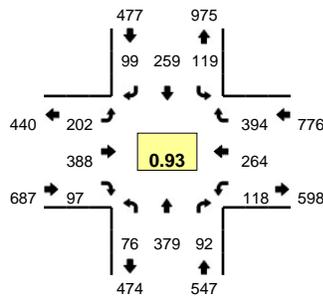


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	20	54	13	0	62	28	9	0	31	53	6	0	11	50	15	0	352	
7:15 AM	27	60	20	0	81	21	12	0	43	58	5	0	11	78	15	0	431	
7:30 AM	37	75	27	0	89	41	26	0	47	84	5	0	19	72	41	0	563	
7:45 AM	52	83	34	0	93	40	28	0	61	125	8	0	38	94	37	0	693	2039
8:00 AM	27	52	22	0	100	58	32	0	39	67	10	0	32	76	24	0	539	2226
8:15 AM	34	59	27	0	103	60	17	0	31	49	8	1	23	55	14	0	481	2276
8:30 AM	10	44	27	0	98	38	35	0	39	47	9	0	14	38	30	0	429	2142
8:45 AM	16	56	29	0	94	46	27	0	37	48	9	0	8	51	13	0	434	1883
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	208	332	136	0	372	160	112	0	244	500	32	0	152	376	148	0	2772	
Heavy Trucks	8	28	8		4	0	4		8	0	0		4	4	0		68	
Pedestrians		40				0				8				24				72
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0			1
Railroad																		
Stopped Buses																		

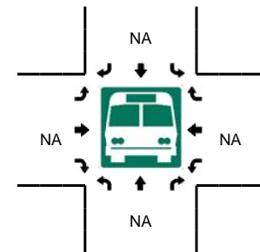
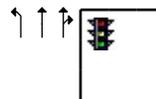
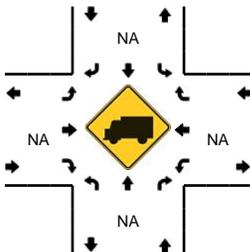
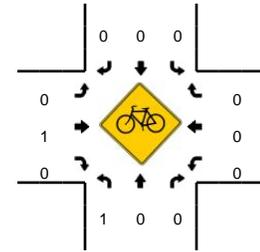
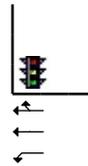
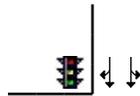
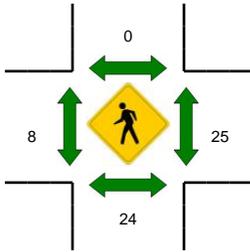
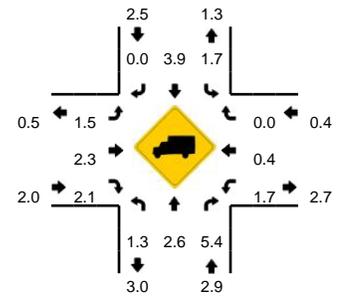
Comments:

LOCATION: Buena Vista St -- Duarte Rd
CITY/STATE: Duarte, CA

QC JOB #: 13634430
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM



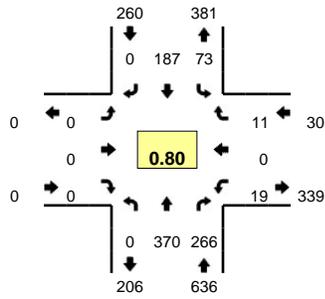
15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	62	22	0	25	59	25	0	42	84	32	0	40	58	86	0	545	
4:15 PM	13	71	28	0	26	71	38	0	41	87	27	0	21	33	73	0	529	
4:30 PM	9	91	29	0	30	57	26	0	53	99	25	0	28	50	95	0	592	
4:45 PM	15	97	21	0	34	56	23	0	55	102	22	1	33	67	87	0	613	2279
5:00 PM	24	105	27	0	18	81	33	0	50	97	21	0	27	72	117	0	672	2406
5:15 PM	28	86	15	0	36	65	17	1	43	90	29	0	30	75	95	0	610	2487
5:30 PM	11	74	29	0	32	88	40	0	32	81	26	0	21	58	90	0	582	2477
5:45 PM	19	79	27	0	25	69	28	0	54	91	24	0	22	46	79	0	563	2427

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	96	420	108	0	72	324	132	0	200	388	84	0	108	288	468	0	2688	
Heavy Trucks	0	16	4		8	4	0		4	8	0		8	0	0		52	
Pedestrians		24				0				0				24			48	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

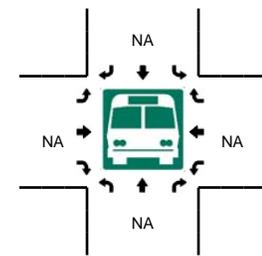
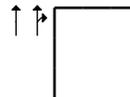
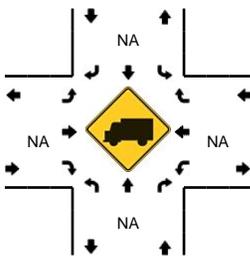
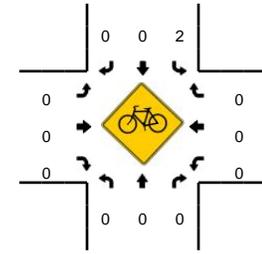
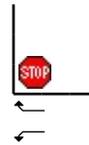
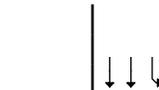
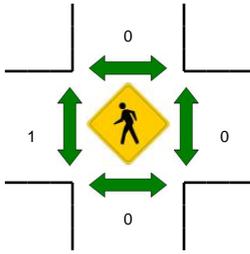
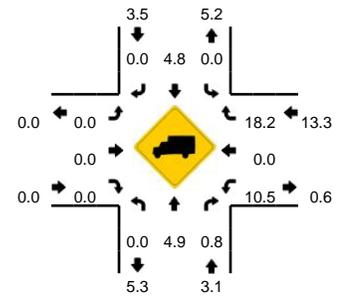
Comments:

LOCATION: Buena Vista St -- Village Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634431
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

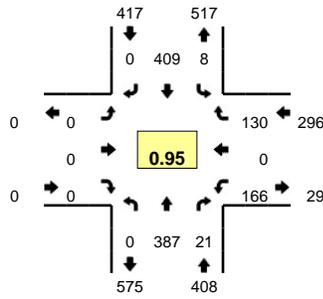


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Village Rd (Eastbound)				Village Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	67	40	0	17	25	0	0	0	0	0	0	1	0	0	0	150	
7:15 AM	0	74	56	0	18	26	0	0	0	0	0	0	4	0	1	0	179	
7:30 AM	0	91	56	0	6	28	0	0	0	0	0	0	5	0	0	0	186	
7:45 AM	0	118	82	0	20	59	0	0	0	0	0	0	7	0	5	0	291	806
8:00 AM	0	77	65	0	22	48	0	0	0	0	0	0	2	0	4	0	218	874
8:15 AM	0	84	63	0	25	52	0	0	0	0	0	0	5	0	2	0	231	926
8:30 AM	0	66	46	0	12	37	0	0	0	0	0	0	6	0	1	0	168	908
8:45 AM	0	61	33	0	30	26	0	0	0	0	0	0	7	0	2	0	159	776
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	472	328	0	80	236	0	0	0	0	0	0	28	0	20	0	1164	
Heavy Trucks	0	24	4		0	4	0		0	0	0		0	0	8		40	
Pedestrians	0	0	0		0	0	0		0	4	0		0	0	0		4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

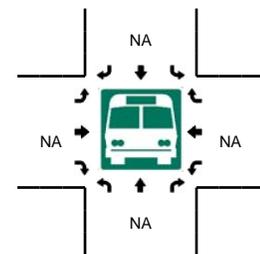
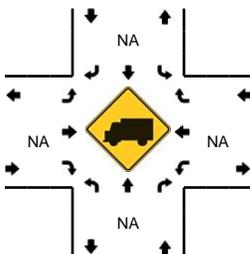
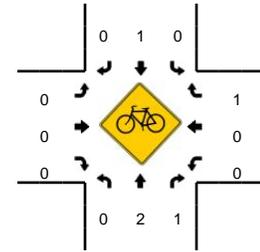
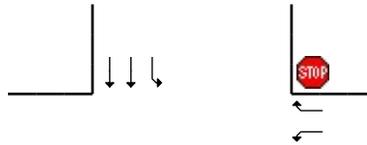
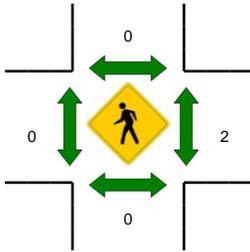
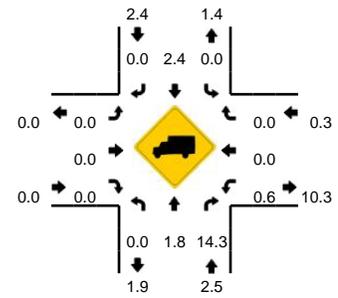
Comments:

LOCATION: Buena Vista St -- Village Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634432
DATE: Wed, Nov 18 2015



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

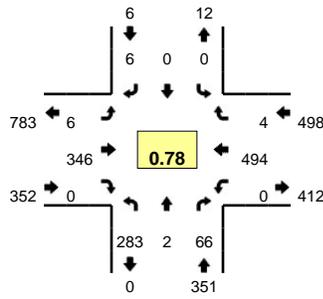


15-Min Count Period Beginning At	Buena Vista St (Northbound)				Buena Vista St (Southbound)				Village Rd (Eastbound)				Village Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	84	4	0	0	109	0	0	0	0	0	0	35	0	24	0	256	
4:15 PM	0	78	5	1	2	97	0	0	0	0	0	0	24	0	10	0	217	
4:30 PM	0	110	7	0	3	91	0	0	0	0	0	0	37	0	25	0	273	
4:45 PM	0	92	10	0	4	96	0	0	0	0	0	0	32	0	25	0	259	1005
5:00 PM	0	103	5	0	3	82	0	0	0	0	0	0	63	0	40	0	296	1045
5:15 PM	0	96	3	0	1	116	0	0	0	0	0	0	34	0	38	0	288	1116
5:30 PM	0	96	3	0	0	115	0	0	0	0	0	0	37	0	27	0	278	1121
5:45 PM	0	73	1	0	1	98	0	0	0	0	0	0	25	0	23	0	221	1083
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	412	20	0	12	328	0	0	0	0	0	0	252	0	160	0	1184	
Heavy Trucks	0	4	0		0	8	0		0	0	0		4	0	0		16	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	1		0	1	0		0	0	0		0	0	0		2	
Railroad																		
Stopped Buses																		

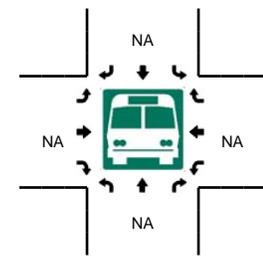
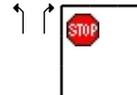
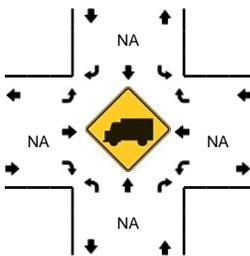
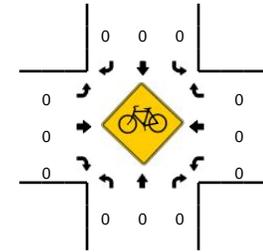
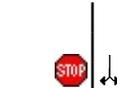
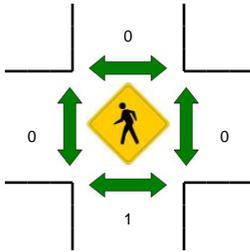
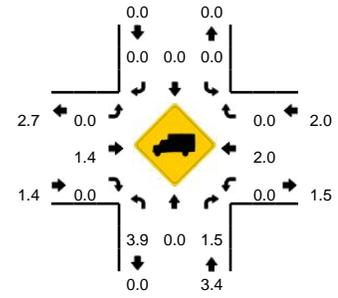
Comments:

LOCATION: I-210 EB Off-Ramp -- Central Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634433
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

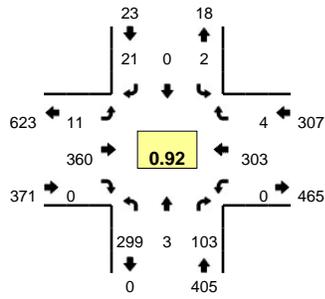


15-Min Count Period Beginning At	I-210 EB Off-Ramp (Northbound)				I-210 EB Off-Ramp (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	46	0	5	0	0	0	2	0	1	26	0	2	0	74	1	0	157	
7:15 AM	64	0	7	0	0	0	0	0	0	65	0	0	0	97	1	0	234	
7:30 AM	71	0	20	0	0	0	0	0	2	109	0	0	0	141	1	0	344	
7:45 AM	62	0	24	0	0	0	1	0	2	133	0	0	0	165	1	0	388	1123
8:00 AM	86	2	15	0	0	0	5	0	2	39	0	0	0	91	1	0	241	1207
8:15 AM	85	1	8	0	0	0	2	0	4	35	0	1	0	38	0	0	174	1147
8:30 AM	113	1	10	0	0	0	1	0	2	35	0	0	0	38	2	0	202	1005
8:45 AM	137	1	19	0	2	0	3	0	2	38	0	0	0	43	0	0	245	862
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	248	0	96	0	0	0	4	0	8	532	0	0	0	660	4	0	1552	
Heavy Trucks	8	0	0		0	0	0		0	4	0		0	16	0		28	
Pedestrians	0				0				0	0			0	0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

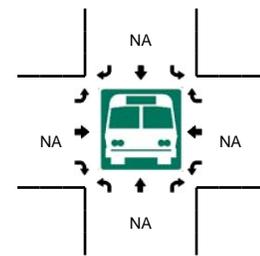
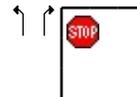
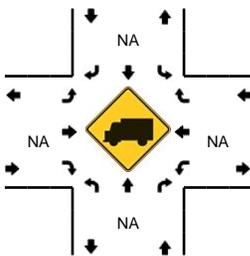
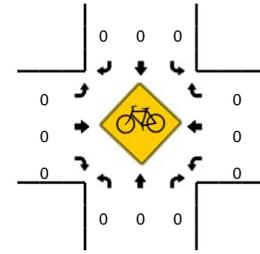
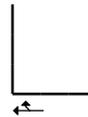
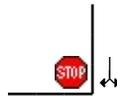
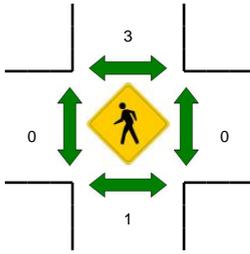
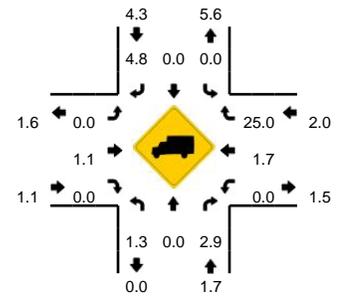
Comments:

LOCATION: I-210 EB Off-Ramp -- Central Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634434
DATE: Wed, Nov 18 2015



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

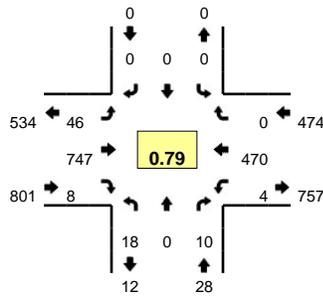


15-Min Count Period Beginning At	I-210 EB Off-Ramp (Northbound)				I-210 EB Off-Ramp (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	58	3	14	0	3	0	3	0	5	80	0	0	0	73	3	0	242	
4:15 PM	81	0	20	0	1	0	2	0	3	84	0	0	0	63	1	0	255	
4:30 PM	60	1	22	0	1	0	8	0	1	86	0	0	0	73	2	0	254	
4:45 PM	86	1	31	0	0	0	4	0	3	93	0	0	0	79	1	0	298	1049
5:00 PM	72	1	30	0	0	0	7	0	4	97	0	0	0	88	0	0	299	1106
5:15 PM	63	0	15	0	0	0	3	0	1	88	0	0	0	72	1	0	243	1094
5:30 PM	85	1	11	0	0	0	3	0	2	75	0	0	0	54	2	0	233	1073
5:45 PM	84	0	18	0	1	0	8	0	3	82	0	0	0	54	1	0	251	1026
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	288	4	120	0	0	0	28	0	16	388	0	0	0	352	0	0	1196	
Heavy Trucks	0	0	4	0	0	0	0	0	0	4	0	0	0	0	0	0	8	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

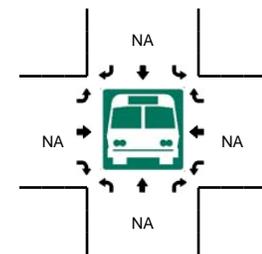
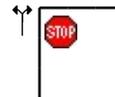
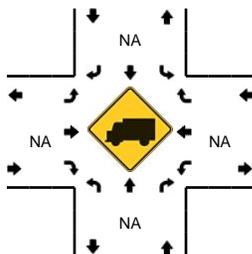
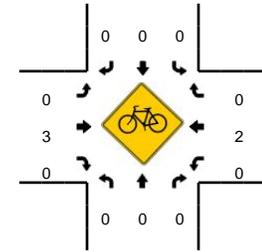
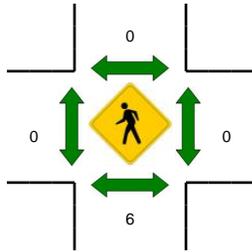
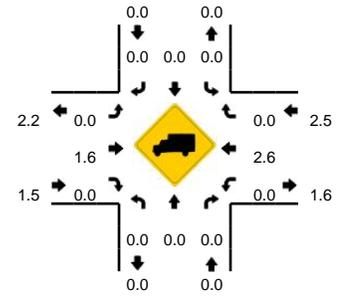
Comments:

LOCATION: Cinco Roberts Dr -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634435
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

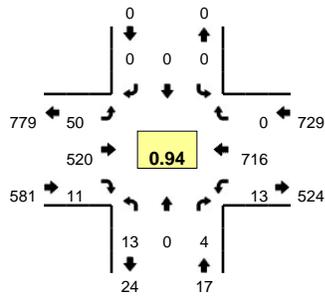


15-Min Count Period Beginning At	Cinco Roberts Dr (Northbound)				Cinco Roberts Dr (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	0	3	0	0	0	0	0	0	128	0	4	2	65	0	0	207	
7:15 AM	3	0	3	0	0	0	0	0	0	148	0	9	0	95	0	0	258	
7:30 AM	4	0	4	0	0	0	0	0	0	169	1	14	2	127	0	0	321	
7:45 AM	8	0	3	0	0	0	0	0	0	237	5	17	1	142	0	0	413	1199
8:00 AM	4	0	3	0	0	0	0	0	0	176	1	12	1	108	0	0	305	1297
8:15 AM	2	0	0	0	0	0	0	0	0	165	1	3	0	93	0	0	264	1303
8:30 AM	3	0	1	0	0	0	0	0	0	166	2	8	1	67	0	0	248	1230
8:45 AM	4	0	0	0	0	0	0	0	0	163	1	5	2	69	0	0	244	1061
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	32	0	12	0	0	0	0	0	0	948	20	68	4	568	0	0	1652	
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	8	0		20	
Pedestrians		4				0				0				0			4	
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1	
Railroad																		
Stopped Buses																		

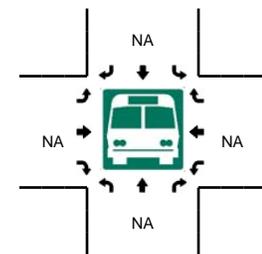
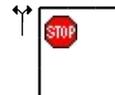
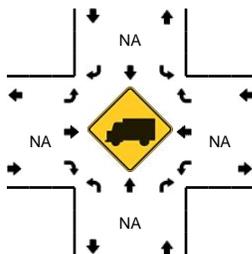
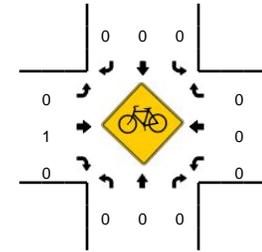
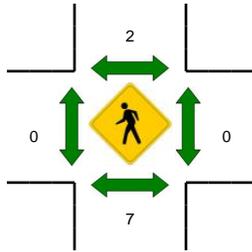
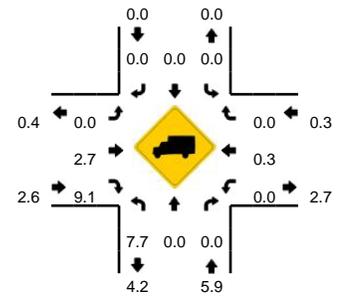
Comments:

LOCATION: Cinco Roberts Dr -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634436
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

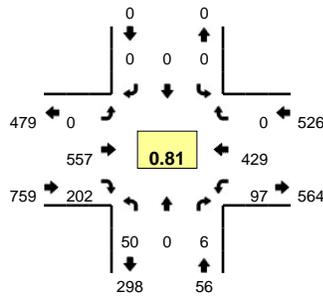


15-Min Count Period Beginning At	Cinco Roberts Dr (Northbound)				Cinco Roberts Dr (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	4	0	0	0	0	0	0	0	0	128	4	10	2	163	0	0	311	
4:15 PM	2	0	2	0	0	0	0	0	0	123	3	11	0	119	0	0	260	
4:30 PM	3	0	0	0	0	0	0	0	0	130	1	14	3	169	0	0	320	
4:45 PM	5	0	0	0	0	0	0	0	0	149	2	10	4	164	0	0	334	1225
5:00 PM	3	0	2	0	0	0	0	0	0	121	4	13	2	209	0	0	354	1268
5:15 PM	2	0	2	0	0	0	0	0	0	120	4	13	4	174	0	0	319	1327
5:30 PM	2	0	0	0	0	0	0	0	0	117	2	11	2	167	0	0	301	1308
5:45 PM	4	0	0	0	0	0	0	0	0	123	6	22	1	120	0	0	276	1250
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	0	8	0	0	0	0	0	0	484	16	52	8	836	0	0	1416	
Heavy Trucks	4	0	0		0	0	0		0	16	4		0	4	0		28	
Pedestrians		8				4				0				0			12	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																	0	
Stopped Buses																		

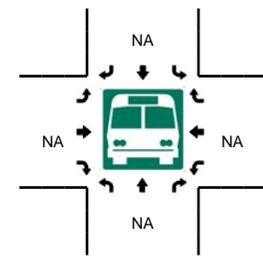
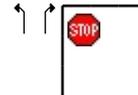
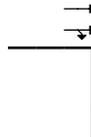
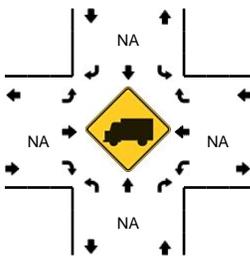
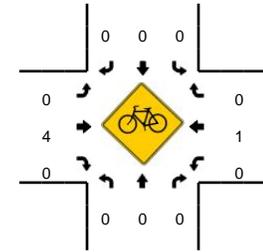
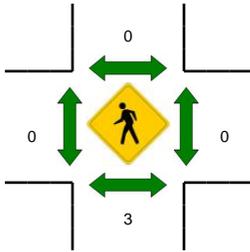
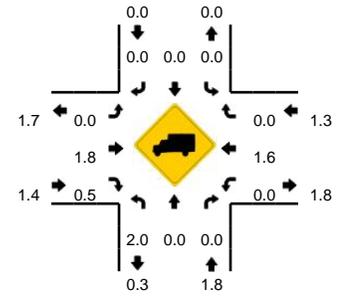
Comments:

LOCATION: Village Rd -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634437
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

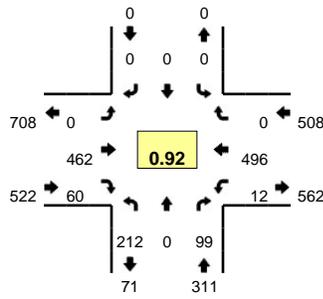


15-Min Count Period Beginning At	Village Rd (Northbound)				Village Rd (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	7	0	1	0	0	0	0	0	0	99	31	0	16	60	0	0	214	
7:15 AM	6	0	1	0	0	0	0	0	0	111	42	0	22	85	0	0	267	
7:30 AM	19	0	2	0	0	0	0	0	0	137	35	0	13	113	0	0	319	
7:45 AM	15	0	1	0	0	0	0	0	0	183	60	0	25	128	0	0	412	1212
8:00 AM	8	0	3	0	0	0	0	0	0	129	50	0	27	102	0	0	319	1317
8:15 AM	8	0	0	0	0	0	0	0	0	108	57	0	31	86	0	1	291	1341
8:30 AM	15	0	1	0	0	0	0	0	0	127	39	0	30	56	0	1	269	1291
8:45 AM	5	0	2	0	0	0	0	0	0	122	43	0	28	67	0	0	267	1146
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	60	0	4	0	0	0	0	0	0	732	240	0	100	512	0	0	1648	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	4	0	0	4	0	0	16	
Pedestrians		4				0				0				0			4	
Bicycles	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

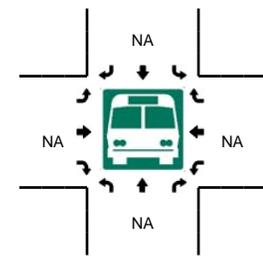
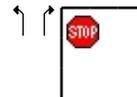
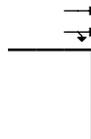
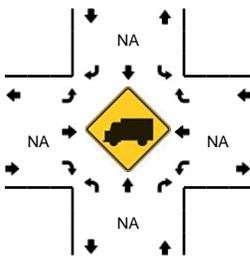
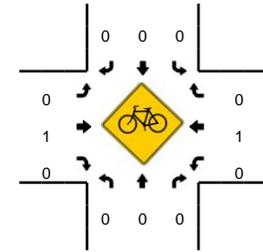
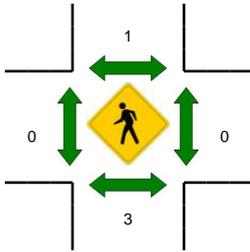
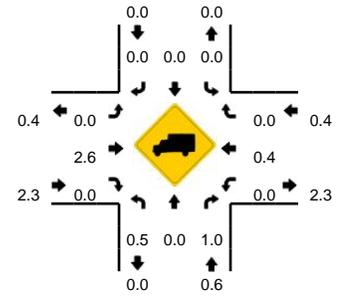
Comments:

LOCATION: Village Rd -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634438
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

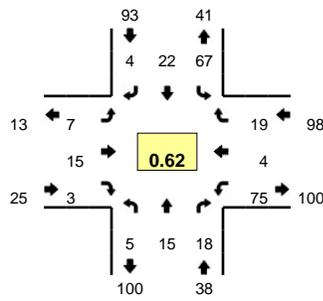


15-Min Count Period Beginning At	Village Rd (Northbound)				Village Rd (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	42	0	11	0	0	0	0	0	0	119	9	0	2	123	0	0	306	
4:15 PM	27	0	9	0	0	0	0	0	0	116	7	0	4	93	0	0	256	
4:30 PM	50	0	28	0	0	0	0	0	0	118	17	0	2	111	0	0	326	
4:45 PM	45	0	23	0	0	0	0	0	0	130	17	0	4	127	0	1	347	1235
5:00 PM	66	0	31	0	0	0	0	0	0	108	15	0	4	139	0	0	363	1292
5:15 PM	51	0	17	0	0	0	0	0	0	106	11	0	1	119	0	0	305	1341
5:30 PM	57	0	13	0	0	0	0	0	0	115	6	0	3	103	0	0	297	1312
5:45 PM	43	0	10	0	0	0	0	0	0	117	3	0	0	77	0	1	251	1216
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	264	0	124	0	0	0	0	0	0	432	60	0	16	556	0	0	1452	
Heavy Trucks	4	0	0	0	0	0	0	0	0	16	0	0	0	4	0	0	24	
Pedestrians		4				4				0				0			8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Railroad																		
Stopped Buses																		

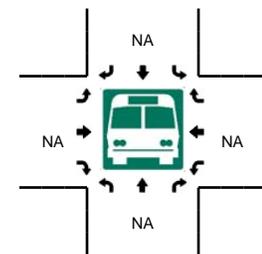
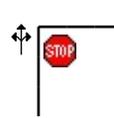
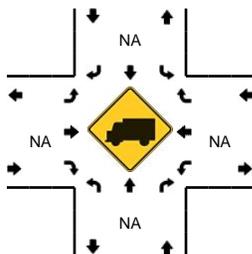
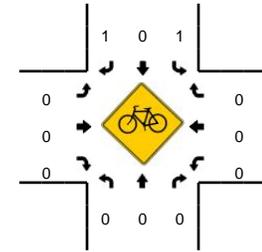
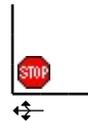
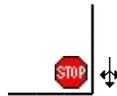
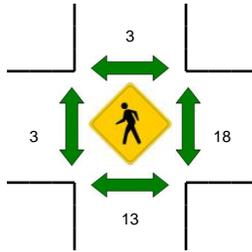
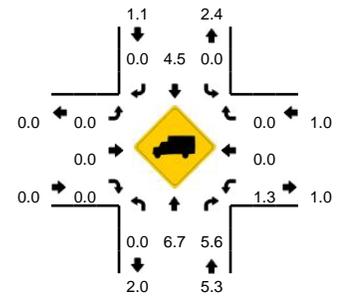
Comments:

LOCATION: Duncannon Ave -- Evergreen St
CITY/STATE: Duarte, CA

QC JOB #: 13634439
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

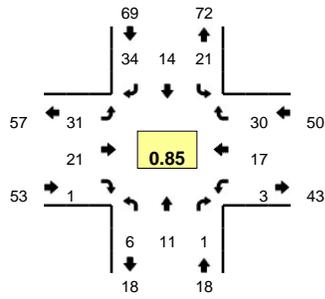


15-Min Count Period Beginning At	Duncannon Ave (Northbound)				Duncannon Ave (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	7	0	7	3	1	0	1	0	0	0	3	1	1	0	26	
7:15 AM	2	3	6	0	11	3	0	0	2	3	1	0	10	0	3	0	44	
7:30 AM	1	2	3	0	20	6	2	0	1	5	0	0	25	2	5	0	72	
7:45 AM	1	6	7	0	24	12	0	0	3	5	1	0	34	1	9	0	103	245
8:00 AM	1	4	2	0	12	1	2	0	1	2	1	0	6	1	2	0	35	254
8:15 AM	0	3	3	0	4	4	1	0	1	1	0	0	4	3	1	0	25	235
8:30 AM	1	1	1	0	6	2	0	0	1	2	0	0	5	0	5	0	24	187
8:45 AM	0	3	4	0	2	2	0	0	1	1	0	0	6	0	3	0	22	106
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	24	28	0	96	48	0	0	12	20	4	0	136	4	36	0	412	
Heavy Trucks	0	4	0		0	0	0		0	0	0		4	0	0		8	
Pedestrians		40				4				0				52			96	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

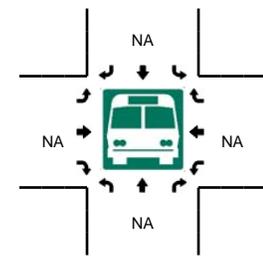
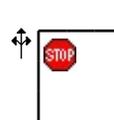
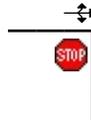
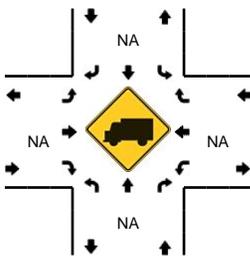
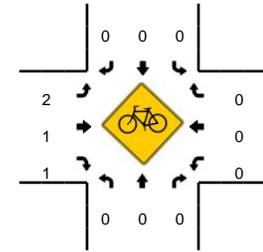
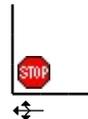
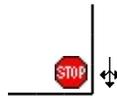
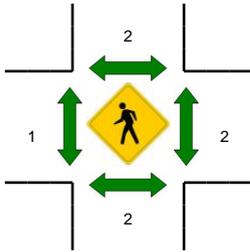
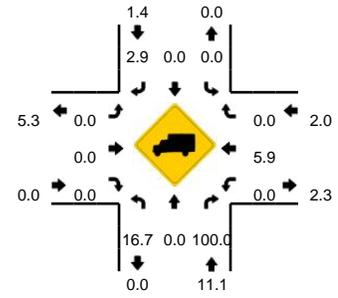
Comments:

LOCATION: Duncannon Ave -- Evergreen St
CITY/STATE: Duarte, CA

QC JOB #: 13634440
DATE: Wed, Nov 18 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

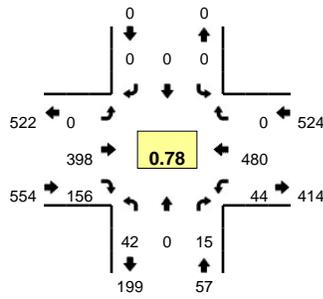


15-Min Count Period Beginning At	Duncannon Ave (Northbound)				Duncannon Ave (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	5	3	2	0	4	2	0	0	2	10	21	0	49	
4:15 PM	1	4	0	0	3	4	9	0	4	3	2	0	0	4	8	0	42	
4:30 PM	0	6	1	0	3	6	5	0	2	1	1	0	0	4	9	0	38	
4:45 PM	0	2	0	0	8	2	4	0	5	1	3	0	0	4	9	0	38	167
5:00 PM	2	3	1	0	11	4	10	0	6	6	0	0	1	5	7	0	56	174
5:15 PM	0	1	0	0	4	3	6	0	14	5	1	0	0	8	9	0	51	183
5:30 PM	4	3	0	0	3	2	5	0	5	4	0	0	0	2	9	0	37	182
5:45 PM	0	4	0	0	3	5	13	0	6	6	0	0	2	2	5	0	46	190
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	8	12	4	0	44	16	40	0	24	24	0	0	4	20	28	0	224	
Heavy Trucks	4	0	4		0	0	0		0	0	0		0	4	0		12	
Pedestrians		8				0				0				4			12	
Bicycles	0	0	0		0	0	0		0	0	1		0	0	0		1	
Railroad																		
Stopped Buses																		

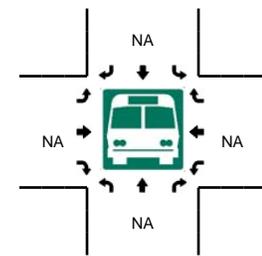
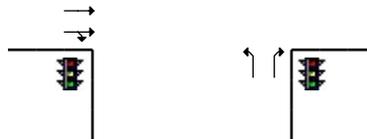
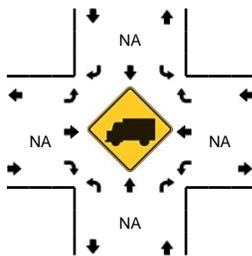
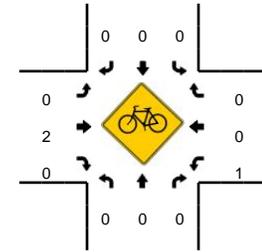
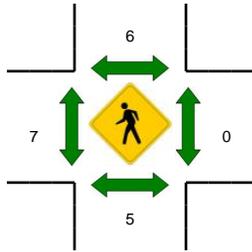
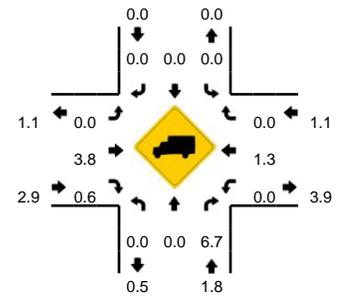
Comments:

LOCATION: Hope Dr -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634441
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

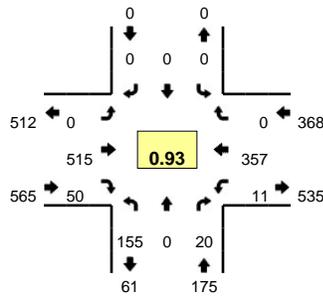


15-Min Count Period Beginning At	Hope Dr (Northbound)				Hope Dr (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	6	0	1	0	0	0	0	0	0	85	14	0	8	69	0	0	183	
7:15 AM	7	0	1	0	0	0	0	0	0	76	28	0	6	104	0	0	222	
7:30 AM	11	0	3	0	0	0	0	0	0	109	29	0	11	112	0	0	275	
7:45 AM	9	0	5	0	0	0	0	0	0	142	46	0	13	147	0	1	363	1043
8:00 AM	13	0	2	0	0	0	0	0	0	85	46	0	7	115	0	0	268	1128
8:15 AM	9	0	5	0	0	0	0	0	0	62	35	0	12	106	0	0	229	1135
8:30 AM	11	0	3	0	0	0	0	0	0	85	53	0	11	75	0	0	238	1098
8:45 AM	10	0	1	0	0	0	0	0	0	71	58	0	21	84	0	0	245	980
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	36	0	20	0	0	0	0	0	0	568	184	0	52	588	0	4	1452	
Heavy Trucks	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

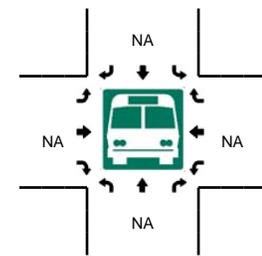
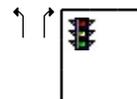
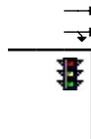
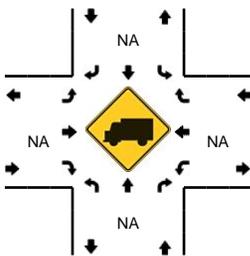
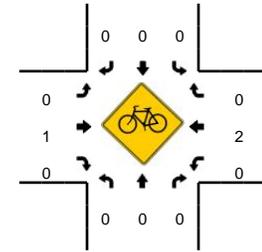
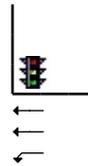
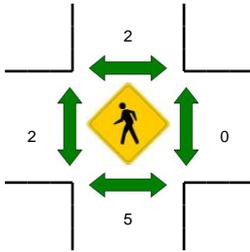
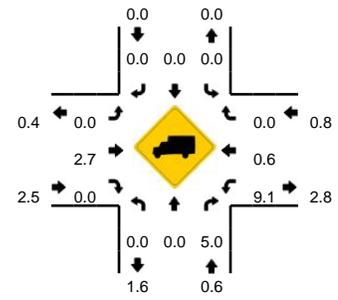
Comments:

LOCATION: Hope Dr -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634442
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

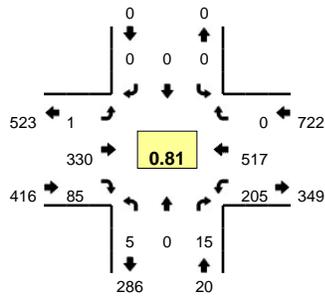


15-Min Count Period Beginning At	Hope Dr (Northbound)				Hope Dr (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	42	0	8	0	0	0	0	0	0	106	19	0	6	82	0	0	263	
4:15 PM	35	0	11	0	0	0	0	0	0	100	18	0	6	64	0	0	234	
4:30 PM	34	0	11	0	0	0	0	0	0	131	20	0	4	80	0	0	280	
4:45 PM	43	0	2	0	0	0	0	0	0	138	11	0	0	85	0	0	279	1056
5:00 PM	48	0	3	0	0	0	0	0	0	131	15	0	4	98	0	0	299	1092
5:15 PM	30	0	4	0	0	0	0	0	0	115	4	0	3	94	0	0	250	1108
5:30 PM	33	0	8	0	0	0	0	0	0	124	10	0	3	75	0	0	253	1081
5:45 PM	26	0	7	0	0	0	0	0	0	122	7	0	1	56	0	0	219	1021
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	192	0	12	0	0	0	0	0	0	524	60	0	16	392	0	0	1196	
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	4	0		20	
Pedestrians		0				4				4				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1	
Railroad																		
Stopped Buses																		

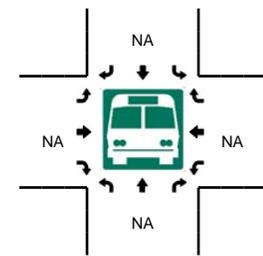
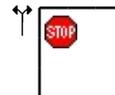
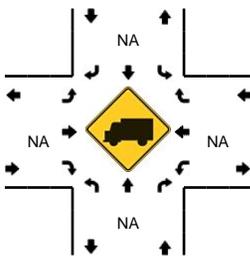
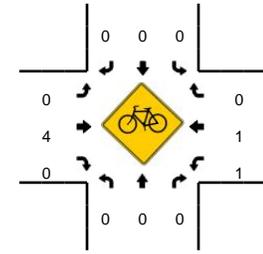
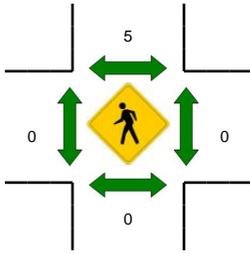
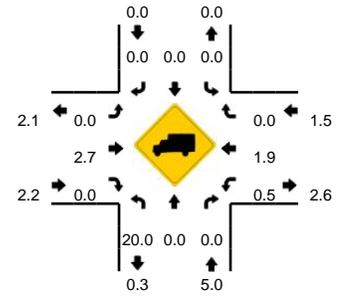
Comments:

LOCATION: Circle Rd -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634443
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

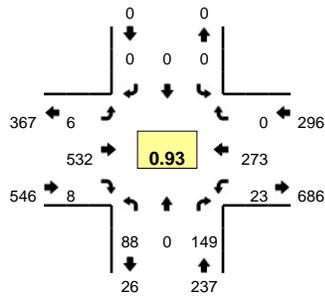


15-Min Count Period Beginning At	Circle Rd (Northbound)				Circle Rd (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	3	0	52	34	0	40	75	0	4	209	
7:15 AM	0	0	1	0	0	0	0	0	0	74	13	1	34	110	0	4	237	
7:30 AM	1	0	7	0	0	0	0	0	0	94	17	0	36	126	0	0	281	
7:45 AM	1	0	2	0	0	0	0	0	0	115	29	1	54	154	0	1	357	1084
8:00 AM	2	0	4	0	0	0	0	0	0	67	22	0	56	120	0	1	272	1147
8:15 AM	1	0	2	0	0	0	0	0	0	54	17	0	55	117	0	2	248	1158
8:30 AM	4	0	3	0	0	0	0	0	0	61	16	3	47	84	0	3	221	1098
8:45 AM	0	0	3	0	0	0	0	0	0	67	6	0	34	99	0	4	213	954
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	0	8	0	0	0	0	0	0	460	116	4	216	616	0	4	1428	
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	1	0		0	1	0		2	
Railroad																		
Stopped Buses																		

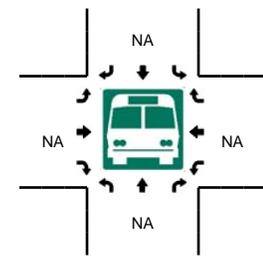
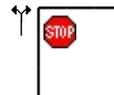
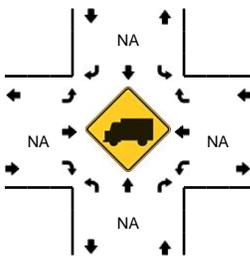
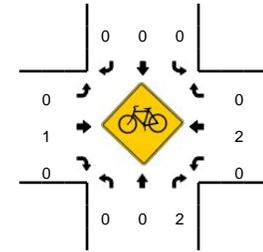
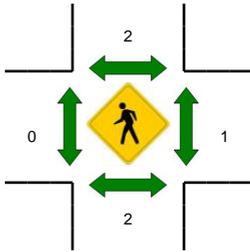
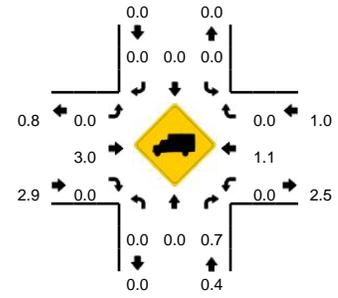
Comments:

LOCATION: Circle Rd -- Duarte Rd
CITY/STATE: Los Angeles, CA

QC JOB #: 13634444
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

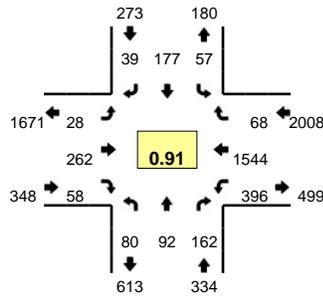


15-Min Count Period Beginning At	Circle Rd (Northbound)				Circle Rd (Southbound)				Duarte Rd (Eastbound)				Duarte Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	19	0	27	0	0	0	0	0	0	110	0	1	1	63	0	0	221	
4:15 PM	18	0	23	0	0	0	0	0	0	109	0	4	4	46	0	0	204	
4:30 PM	20	0	33	0	0	0	0	0	0	144	4	0	3	74	0	0	278	
4:45 PM	12	0	28	0	0	0	0	0	0	137	2	1	8	65	0	2	255	958
5:00 PM	31	0	56	0	0	0	0	0	0	129	0	3	3	67	0	0	289	1026
5:15 PM	25	0	32	0	0	0	0	0	0	122	2	2	4	67	0	3	257	1079
5:30 PM	14	0	19	0	0	0	0	0	0	121	0	0	2	67	0	0	223	1024
5:45 PM	17	0	15	0	0	0	0	0	0	130	1	1	1	41	0	2	208	977
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	124	0	224	0	0	0	0	0	0	516	0	12	12	268	0	0	1156	
Heavy Trucks	0	0	4	0	0	0	0	0	0	16	0	0	0	4	0	0	24	
Pedestrians	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Railroad																		
Stopped Buses																		

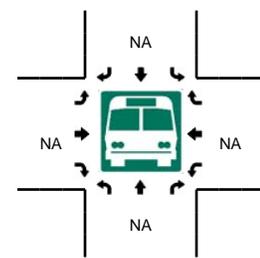
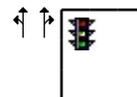
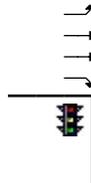
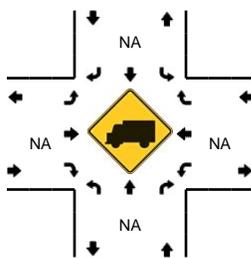
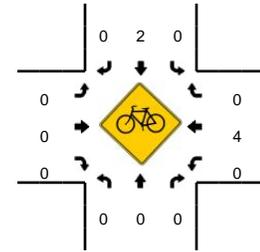
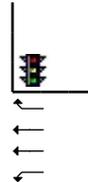
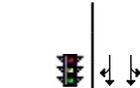
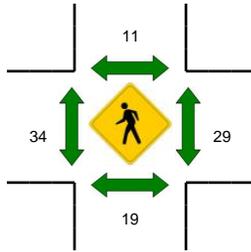
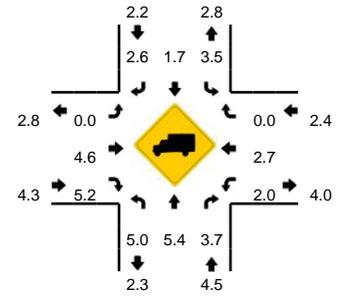
Comments:

LOCATION: Highland Ave -- Huntington Dr
CITY/STATE: Los Angeles, CA

QC JOB #: 13634445
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

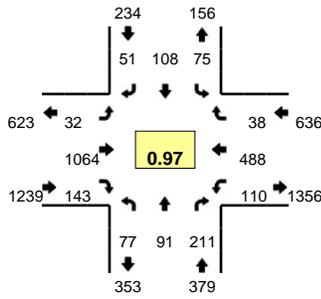


15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Huntington Dr (Eastbound)				Huntington Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U														
7:00 AM	8	20	14	0	11	24	12	0	2	42	7	2	70	443	10	4	669	
7:15 AM	13	18	26	0	11	36	13	0	5	40	13	0	84	379	20	5	663	
7:30 AM	21	18	52	0	9	41	5	0	4	64	14	4	91	423	15	6	767	
7:45 AM	30	31	49	0	17	77	10	0	6	87	20	2	112	351	16	5	813	2912
8:00 AM	16	25	35	0	20	23	11	0	5	71	11	2	91	391	17	2	720	2963
8:15 AM	14	13	26	0	14	32	9	0	2	60	13	1	81	345	20	4	634	2934
8:30 AM	17	22	29	0	11	21	12	0	4	82	14	1	84	377	25	3	702	2869
8:45 AM	18	15	33	0	16	18	9	0	3	65	10	1	79	308	23	2	600	2656
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U														
All Vehicles	120	124	196	0	68	308	40	0	24	348	80	8	448	1404	64	20	3252	
Heavy Trucks	0	4	8		0	4	0		0	8	4		4	40	0		72	
Pedestrians		8				12				24				28			72	
Bicycles	0	0	0		0	1	0		0	0	0		0	2	0		3	
Railroad																		
Stopped Buses																		

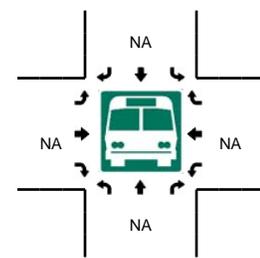
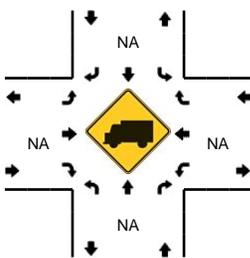
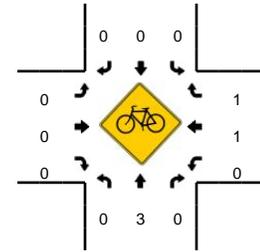
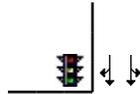
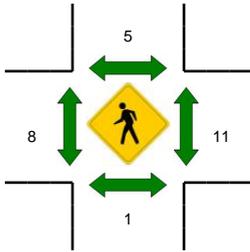
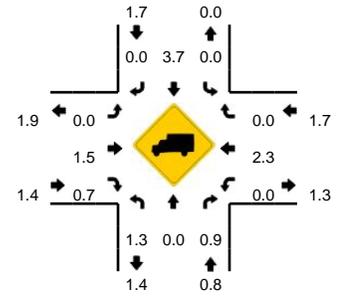
Comments:

LOCATION: Highland Ave -- Huntington Dr
CITY/STATE: Los Angeles, CA

QC JOB #: 13634446
DATE: Wed, Nov 18 2015



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM



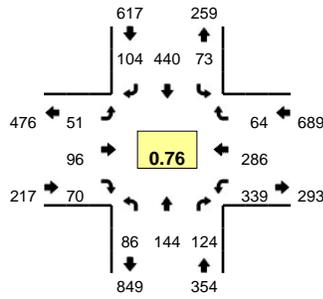
15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Huntington Dr (Eastbound)				Huntington Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U														
4:00 PM	24	26	100	0	14	22	6	0	3	298	17	2	24	129	14	2	681	
4:15 PM	19	21	47	0	11	16	7	0	7	219	26	1	33	144	24	17	592	
4:30 PM	21	24	59	0	11	26	10	0	5	190	35	0	40	139	15	6	581	
4:45 PM	25	30	50	0	14	46	20	0	5	170	41	0	28	141	15	3	588	2442
5:00 PM	23	22	63	0	17	22	9	0	6	297	33	2	19	112	7	2	634	2395
5:15 PM	17	28	52	0	16	34	14	0	7	234	35	0	30	131	6	0	604	2407
5:30 PM	19	18	52	0	22	32	12	1	2	250	39	2	26	119	12	6	612	2438
5:45 PM	18	23	44	0	18	20	16	1	10	283	36	3	27	126	13	0	638	2488

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	72	92	176	0	72	80	64	4	40	1132	144	12	108	504	52	0	2552
Heavy Trucks	4	0	4		0	0	0		0	4	0		0	12	0		24
Pedestrians		4				8				0				16			28
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

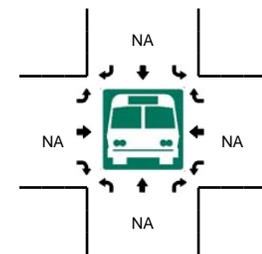
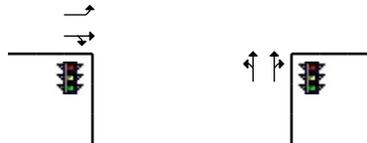
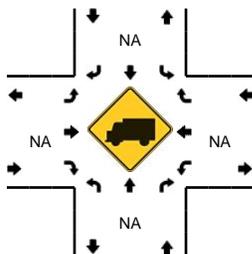
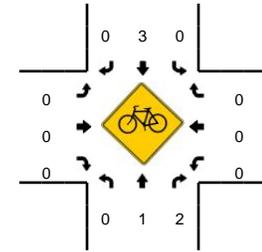
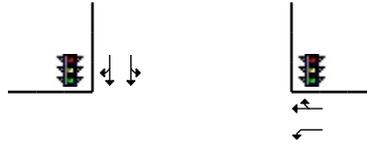
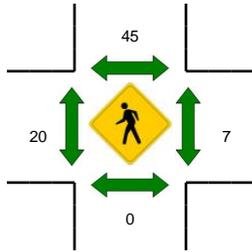
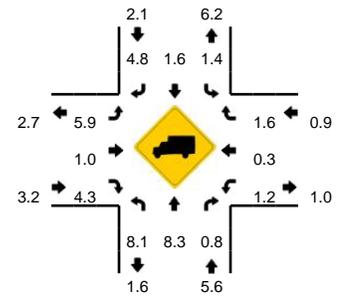
Comments:

LOCATION: Highland Ave -- Central Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634447
DATE: Wed, Nov 18 2015



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

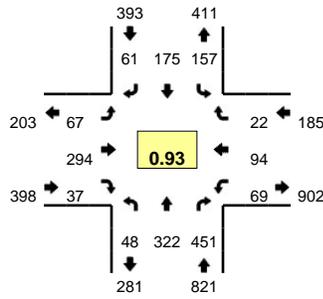


15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	36	9	0	6	84	18	0	5	7	3	0	61	46	2	0	280	
7:15 AM	12	25	21	0	10	92	22	0	9	16	8	0	86	60	15	0	376	
7:30 AM	30	40	17	0	17	102	29	0	14	16	11	0	78	100	15	0	469	
7:45 AM	38	49	56	0	34	135	40	0	18	43	28	0	76	82	20	0	619	1744
8:00 AM	6	30	30	0	12	111	13	0	10	21	23	0	99	44	14	0	413	1877
8:15 AM	0	29	25	0	4	119	4	0	4	9	16	0	82	19	10	0	321	1822
8:30 AM	0	34	19	0	4	94	8	0	6	8	16	0	70	25	6	0	290	1643
8:45 AM	3	34	19	0	3	95	11	0	4	10	22	0	50	20	8	0	279	1303
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	152	196	224	0	136	540	160	0	72	172	112	0	304	328	80	0	2476	
Heavy Trucks	8	16	0		0	8	8		4	0	0		0	4	4		52	
Pedestrians		0				32				0				8			40	
Bicycles	0	1	0		0	1	0		0	0	0		0	0	0		2	
Railroad																		
Stopped Buses																		

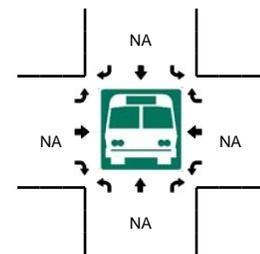
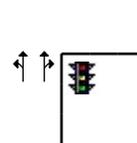
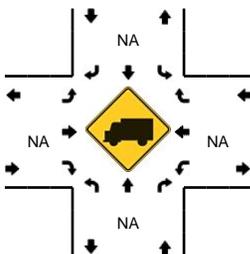
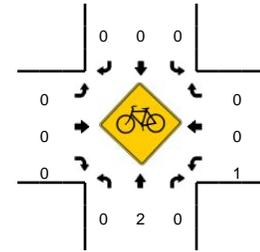
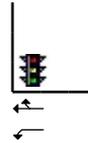
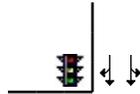
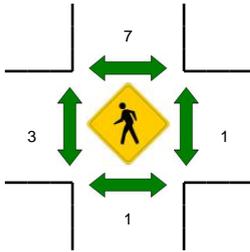
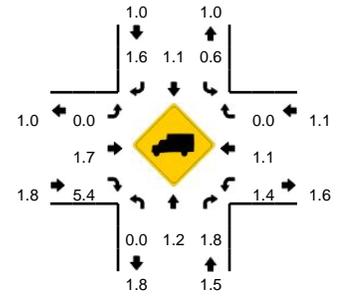
Comments:

LOCATION: Highland Ave -- Central Ave
CITY/STATE: Los Angeles, CA

QC JOB #: 13634448
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

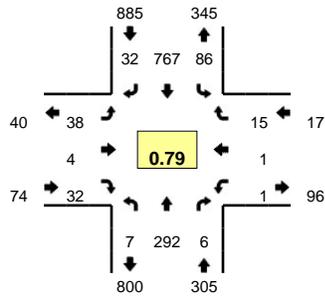


15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Central Ave (Eastbound)				Central Ave (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	9	112	107	0	14	34	12	0	16	55	8	0	8	17	11	0	403		
4:15 PM	14	61	91	0	26	23	18	0	15	67	8	0	14	20	8	0	365		
4:30 PM	10	85	108	0	29	55	14	0	17	75	8	0	20	26	3	0	450		
4:45 PM	8	60	121	0	51	36	19	0	20	75	15	0	18	24	8	0	455	1673	
5:00 PM	18	114	117	0	37	36	16	0	15	73	8	0	16	27	6	0	483	1753	
5:15 PM	12	63	105	0	40	48	12	0	15	71	6	0	15	17	5	0	409	1797	
5:30 PM	6	74	100	0	40	35	17	0	21	50	7	0	20	18	7	0	395	1742	
5:45 PM	10	65	87	0	35	31	19	0	21	62	4	0	15	16	11	0	376	1663	
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total		
All Vehicles	72	456	468	0	148	144	64	0	60	292	32	0	64	108	24	0	1932		
Heavy Trucks	0	0	8		0	0	0		0	4	0		0	4	0		16		
Pedestrians	0	0	0		0	4	0		0	0	0		0	4	0		8		
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1		
Railroad																			
Stopped Buses																			

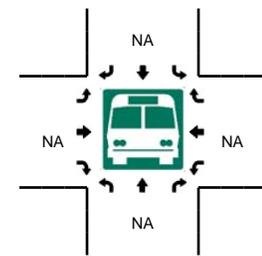
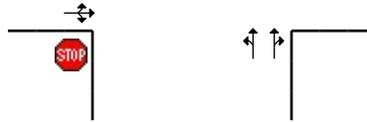
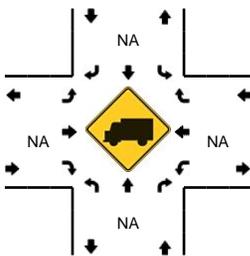
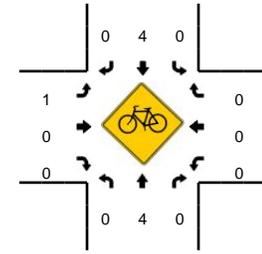
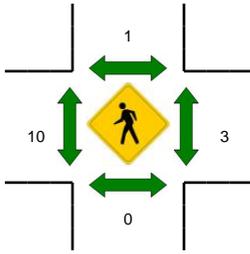
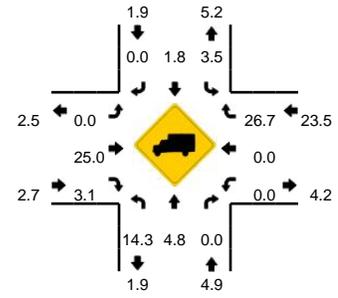
Comments:

LOCATION: Highland Ave -- Evergreen St
CITY/STATE: Los Angeles, CA

QC JOB #: 13634449
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

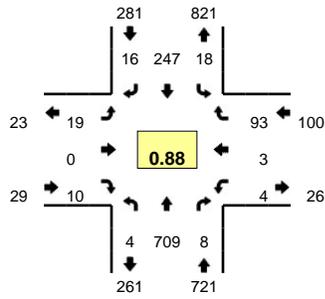


15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	41	1	0	9	133	5	0	4	1	0	0	0	0	1	0	195	
7:15 AM	0	56	0	0	22	163	5	0	5	1	2	0	0	1	0	0	255	
7:30 AM	1	83	1	0	18	170	7	0	8	1	10	0	0	0	1	0	300	
7:45 AM	5	109	2	0	18	214	8	0	26	2	15	0	0	1	5	0	405	1155
8:00 AM	0	58	2	0	22	194	14	0	1	1	5	0	1	0	4	0	302	1262
8:15 AM	1	42	1	0	28	189	3	0	3	0	2	0	0	0	5	0	274	1281
8:30 AM	0	47	4	0	18	166	2	0	1	1	1	0	0	0	9	0	249	1230
8:45 AM	0	47	3	0	17	144	5	0	5	1	2	0	0	0	9	0	233	1058
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	20	436	8	0	72	856	32	0	104	8	60	0	0	4	20	0	1620	
Heavy Trucks	0	12	0		0	4	0		0	4	0		0	0	8		28	
Pedestrians		0				4				0				0			4	
Bicycles	0	1	0		0	1	0		0	0	0		0	0	0		2	
Railroad																		
Stopped Buses																		

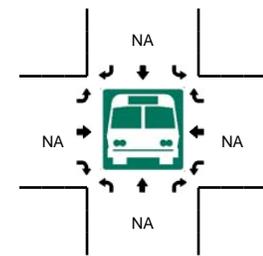
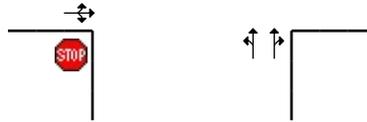
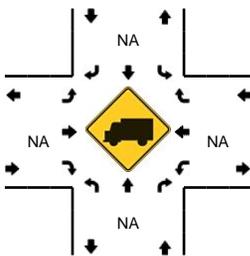
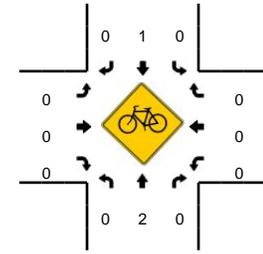
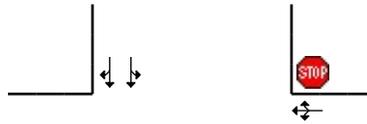
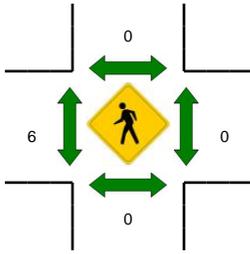
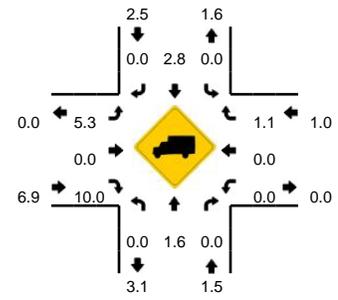
Comments:

LOCATION: Highland Ave -- Evergreen St
CITY/STATE: Los Angeles, CA

QC JOB #: 13634450
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

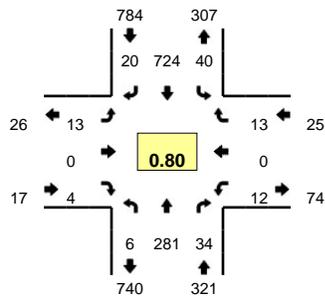


15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Evergreen St (Eastbound)				Evergreen St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	198	1	0	6	42	3	0	6	1	1	0	1	3	21	0	283	
4:15 PM	1	141	2	0	4	41	0	0	3	0	2	0	3	1	25	0	223	
4:30 PM	1	172	2	0	5	76	4	0	3	0	1	0	2	0	27	0	293	
4:45 PM	0	172	2	0	6	57	4	0	3	0	4	0	1	2	14	0	265	1064
5:00 PM	2	209	3	0	4	54	3	0	8	0	2	0	1	1	35	0	322	1103
5:15 PM	1	156	1	0	3	60	5	0	5	0	3	0	0	0	17	0	251	1131
5:30 PM	0	156	1	0	5	51	7	1	5	1	1	0	0	0	18	0	246	1084
5:45 PM	1	159	0	0	3	41	5	0	6	1	1	0	1	1	11	0	230	1049
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	836	12	0	16	216	12	0	32	0	8	0	4	4	140	0	1288	
Heavy Trucks	0	20	0		0	0	0		0	0	0		0	0	4		24	
Pedestrians		0				0				4				0			4	
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

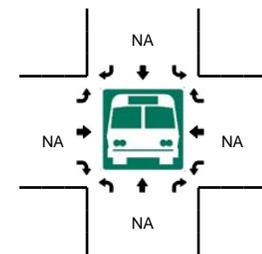
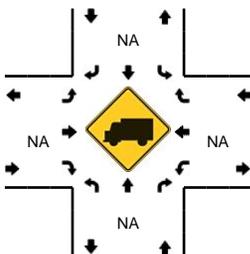
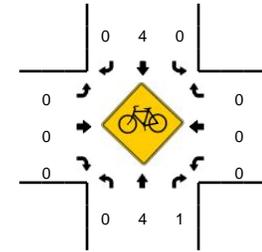
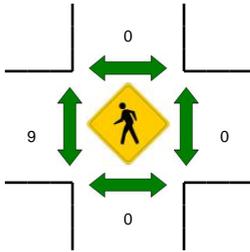
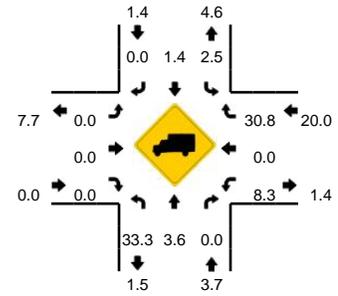
Comments:

LOCATION: Highland Ave -- Business Center Dr
CITY/STATE: Duarte, CA

QC JOB #: 13634451
DATE: Wed, Nov 18 2015



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

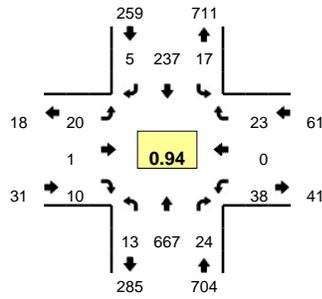


15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Business Center Dr (Eastbound)				Business Center Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	43	9	0	4	127	6	0	1	0	1	0	0	0	0	0	191	
7:15 AM	2	54	12	0	12	147	5	0	0	0	1	0	3	0	2	0	238	
7:30 AM	3	80	2	0	8	163	1	0	0	0	0	0	0	0	1	0	258	
7:45 AM	1	105	10	0	10	211	5	0	7	0	3	0	2	0	4	0	358	1045
8:00 AM	1	54	12	0	16	178	3	0	4	0	1	0	2	0	6	0	277	1131
8:15 AM	1	42	10	0	6	172	11	0	2	0	0	0	8	0	2	0	254	1147
8:30 AM	1	48	11	0	12	142	8	0	0	0	0	0	3	0	3	0	228	1117
8:45 AM	2	50	18	0	18	119	7	0	0	0	0	0	5	0	3	0	222	981
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	420	40	0	40	844	20	0	28	0	12	0	8	0	16	0	1432	
Heavy Trucks	4	8	0		0	4	0		0	0	0		4	0	8		28	
Pedestrians		0				0				0				0			0	
Bicycles	0	1	0		0	1	0		0	0	0		0	0	0		2	
Railroad																		
Stopped Buses																		

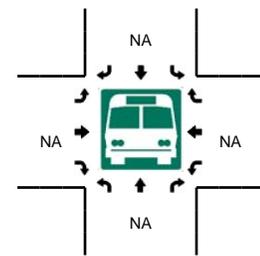
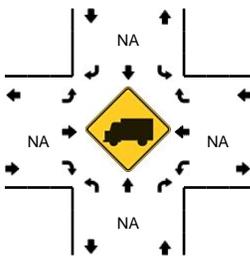
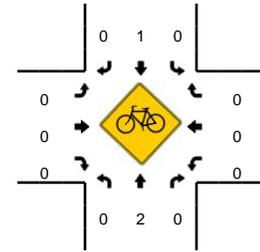
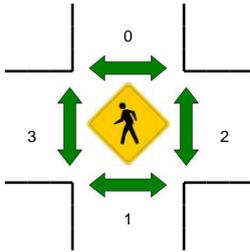
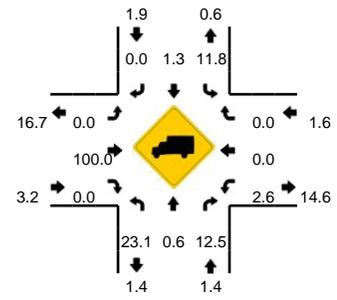
Comments:

LOCATION: Highland Ave -- Business Center Dr
CITY/STATE: Duarte, CA

QC JOB #: 13634452
DATE: Wed, Nov 18 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

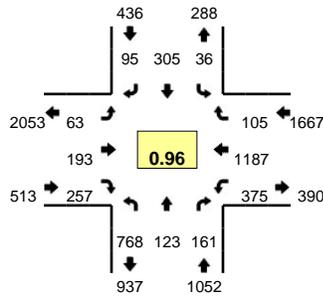


15-Min Count Period Beginning At	Highland Ave (Northbound)				Highland Ave (Southbound)				Business Center Dr (Eastbound)				Business Center Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	147	3	0	3	38	2	0	44	0	5	0	5	0	3	0	251	
4:15 PM	1	130	6	0	3	42	0	0	4	0	1	0	7	0	5	0	199	
4:30 PM	3	160	9	0	8	68	0	0	4	1	2	0	6	0	10	0	271	
4:45 PM	2	166	7	0	6	59	0	0	4	0	4	0	11	0	2	0	261	982
5:00 PM	1	192	5	0	1	53	0	0	8	0	2	0	10	0	8	0	280	1011
5:15 PM	7	149	3	0	1	57	5	1	4	0	2	0	11	0	3	0	243	1055
5:30 PM	5	145	4	0	5	46	1	0	2	0	2	0	15	0	10	0	235	1019
5:45 PM	1	148	0	0	2	39	1	0	7	0	1	0	4	0	5	0	208	966
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	768	20	0	4	212	0	0	32	0	8	0	40	0	32	0	1120	
Heavy Trucks	0	8	4		0	0	0		0	0	0		0	0	0		12	
Pedestrians		0				0				4				0			4	
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

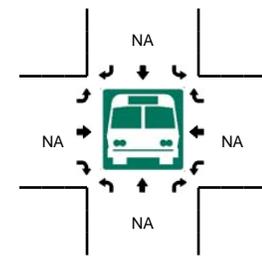
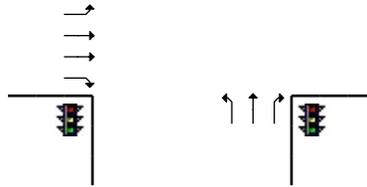
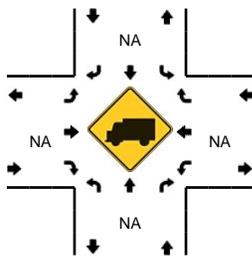
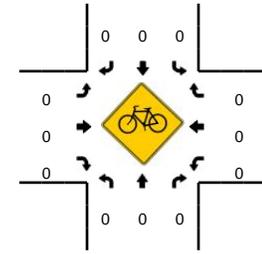
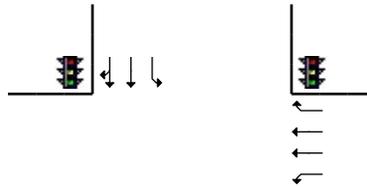
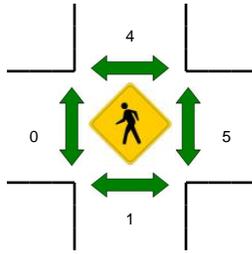
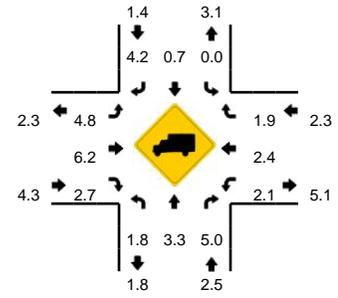
Comments:

LOCATION: Mt Olive Dr/I-605 Ramps -- Huntington Dr
CITY/STATE: Los Angeles, CA

QC JOB #: 13634453
DATE: Wed, Nov 18 2015



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM



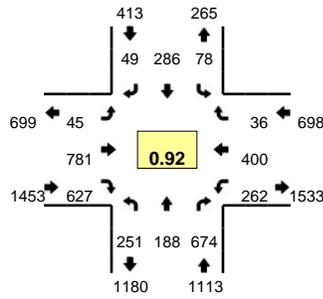
15-Min Count Period Beginning At	Mt Olive Dr/I-605 Ramps (Northbound)				Mt Olive Dr/I-605 Ramps (Southbound)				Huntington Dr (Eastbound)				Huntington Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	63	7	28	1	5	49	2	0	2	13	40	0	136	146	4	0	496	
7:15 AM	145	9	31	1	0	63	6	0	3	21	52	0	156	224	11	0	722	
7:30 AM	187	16	25	1	3	86	5	0	2	19	54	0	112	269	6	0	785	
7:45 AM	143	23	36	0	3	75	9	0	2	25	48	0	136	372	31	0	903	2906
8:00 AM	197	24	20	0	6	80	20	0	8	40	46	1	102	315	20	0	879	3289
8:15 AM	205	37	27	0	8	77	16	0	12	35	69	1	89	307	30	0	913	3480
8:30 AM	196	39	55	0	8	68	20	0	20	73	69	0	97	282	24	0	951	3646
8:45 AM	170	23	59	0	14	80	39	0	20	45	73	1	87	283	31	0	925	3668

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	784	156	220	0	32	272	80	0	80	292	276	0	388	1128	96	0	3804	
Heavy Trucks	12	4	12		0	0	12		4	24	12		4	20	4		108	
Pedestrians	0	0	0		0	0	0		0	0	0		4	4	0		4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

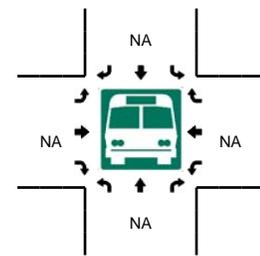
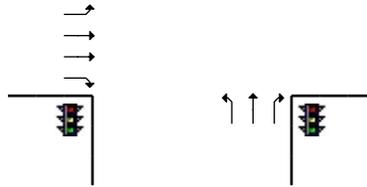
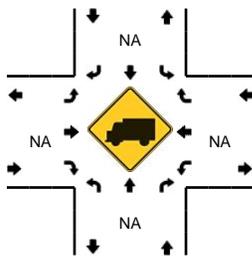
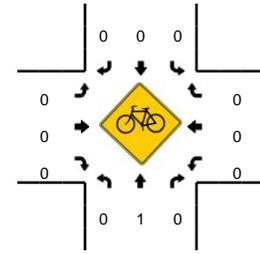
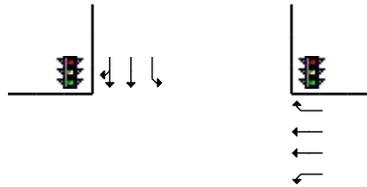
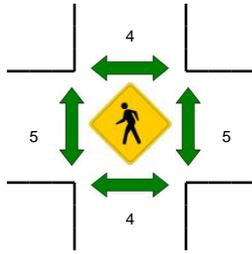
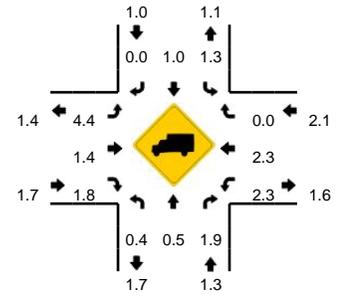
Comments:

LOCATION: Mt Olive Dr/I-605 Ramps -- Huntington Dr
CITY/STATE: Los Angeles, CA

QC JOB #: 13634454
DATE: Thu, Dec 10 2015



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM



15-Min Count Period Beginning At	Mt Olive Dr/I-605 Ramps (Northbound)				Mt Olive Dr/I-605 Ramps (Southbound)				Huntington Dr (Eastbound)				Huntington Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	97	51	162	2	30	59	9	0	8	157	117	1	67	107	14	0	881	
4:15 PM	78	75	123	1	24	94	15	0	14	76	133	0	71	118	12	1	835	
4:30 PM	80	75	183	4	21	92	13	0	13	197	163	3	68	77	12	0	1001	
4:45 PM	54	36	158	0	20	59	10	0	4	184	138	1	77	114	10	0	865	3582
5:00 PM	62	34	160	1	18	71	9	0	7	185	183	0	59	104	5	0	898	3599
5:15 PM	50	43	173	0	19	64	17	0	17	215	143	0	58	105	9	0	913	3677
5:30 PM	60	40	156	0	26	73	16	0	11	225	164	0	53	86	6	1	917	3593
5:45 PM	77	39	160	0	22	53	11	0	10	159	155	2	60	122	11	2	883	3611
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	320	300	732	16	84	368	52	0	52	788	652	12	272	308	48	0	4004	
Heavy Trucks	4	4	8		0	0	0		8	12	24		4	4	0		68	
Pedestrians		4				0				4				4			12	
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		0	0	0		0			0	
12:15 AM		0	0	0		0			0	
12:30 AM		0	0	0		0			0	
12:45 AM		0	0	0		0			0	
1:00 AM		0	0	0		0			0	
1:15 AM		0	0	0		0			0	
1:30 AM		0	0	0		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		0	0	0		0			0	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		0	0	0		0			0	
4:45 AM		0	0	0		0			0	
5:00 AM		0	0	0		0			0	
5:15 AM		0	0	0		0			0	
5:30 AM		0	0	0		0			0	
5:45 AM		0	0	0		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		0	0	0		0			0	
6:15 AM		0	0	0		0			0	
6:30 AM		0	0	0		0			0	
6:45 AM		0	0	0		0			0	
7:00 AM		0	0	0		0			0	
7:15 AM		0	0	2		1			1	█
7:30 AM		0	0	0		0			0	
7:45 AM		0	1	1		1			1	█
8:00 AM		0	0	0		0			0	
8:15 AM		0	1	0		0			0	
8:30 AM		1	2	0		1			1	█
8:45 AM		0	0	0		0			0	
9:00 AM		3	0	2		2			2	█
9:15 AM		0	0	1		0			0	
9:30 AM		0	1	1		1			1	█
9:45 AM		1	1	0		1			1	█
10:00 AM		1	1	0		1			1	█
10:15 AM		1	0	2		1			1	█
10:30 AM		0	0	0		0			0	
10:45 AM		1	0	1		1			1	█
11:00 AM		1	1	1		1			1	█
11:15 AM		0	5	0		2			2	█
11:30 AM		1	3	0		1			1	█
11:45 AM		0	1	1		1			1	█
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		2	1	0		1			1	
12:15 PM		1	0	1		1			1	
12:30 PM		1	1	0		1			1	
12:45 PM		1	1	1		1			1	
1:00 PM		0	0	1		0			0	
1:15 PM		1	0	0		0			0	
1:30 PM		0	0	0		0			0	
1:45 PM		1	0	0		0			0	
2:00 PM		1	0	0		0			0	
2:15 PM		1	0	1		1			1	
2:30 PM		2	0	1		1			1	
2:45 PM		1	0	0		0			0	
3:00 PM		1	0	2		1			1	
3:15 PM		1	2	1		1			1	
3:30 PM		0	1	0		0			0	
3:45 PM		2	0	1		1			1	
4:00 PM		0	0	1		0			0	
4:15 PM		1	0	0		0			0	
4:30 PM		2	2	1		2			2	
4:45 PM		3	0	2		2			2	
5:00 PM		1	1	0		1			1	
5:15 PM		0	0	0		0			0	
5:30 PM		0	0	0		0			0	
5:45 PM		0	0	0		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		0	0	0		0			0	
6:15 PM		0	0	0		0			0	
6:30 PM		0	0	0		0			0	
6:45 PM		0	0	0		0			0	
7:00 PM		0	0	0		0			0	
7:15 PM		0	0	0		0			0	
7:30 PM		0	0	0		0			0	
7:45 PM		0	0	0		0			0	
8:00 PM		0	0	0		0			0	
8:15 PM		0	0	0		0			0	
8:30 PM		0	0	0		0			0	
8:45 PM		0	0	0		0			0	
9:00 PM		0	0	0		0			0	
9:15 PM		0	0	0		0			0	
9:30 PM		0	0	0		0			0	
9:45 PM		0	0	0		0			0	
10:00 PM		0	0	0		0			0	
10:15 PM		0	0	0		0			0	
10:30 PM		0	0	0		0			0	
10:45 PM		0	0	0		0			0	
11:00 PM		0	0	0		0			0	
11:15 PM		0	0	0		0			0	
11:30 PM		0	0	0		0			0	
11:45 PM		0	0	0		0			0	
Day Total		33	26	25		29			29	
% Weekday Average		113.8%	89.7%	86.2%						
% Week Average		113.8%	89.7%	86.2%		100.0%				
AM Peak		9:00 AM	11:15 AM	7:15 AM		9:00 AM			9:00 AM	
Volume		3	5	2		2			2	
PM Peak		4:45 PM	3:15 PM	3:00 PM		4:30 PM			4:30 PM	
Volume		3	2	2		2			2	
<i>Comments:</i>										

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		0	0	0		0			0	
12:15 AM		0	0	0		0			0	
12:30 AM		0	0	0		0			0	
12:45 AM		0	0	0		0			0	
1:00 AM		0	0	0		0			0	
1:15 AM		0	0	0		0			0	
1:30 AM		0	0	0		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		0	0	0		0			0	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		0	0	0		0			0	
4:45 AM		0	0	0		0			0	
5:00 AM		0	0	0		0			0	
5:15 AM		0	0	0		0			0	
5:30 AM		0	0	0		0			0	
5:45 AM		0	0	0		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		1	1	1		1			1	
6:15 AM		0	0	0		0			0	
6:30 AM		0	0	0		0			0	
6:45 AM		0	0	0		0			0	
7:00 AM		0	0	0		0			0	
7:15 AM		2	2	1		2			2	
7:30 AM		0	0	1		0			0	
7:45 AM		0	0	0		0			0	
8:00 AM		0	0	0		0			0	
8:15 AM		0	0	0		0			0	
8:30 AM		1	3	0		1			1	
8:45 AM		1	0	1		1			1	
9:00 AM		1	1	1		1			1	
9:15 AM		0	0	1		0			0	
9:30 AM		0	0	0		0			0	
9:45 AM		0	0	0		0			0	
10:00 AM		0	0	0		0			0	
10:15 AM		1	1	1		1			1	
10:30 AM		0	1	1		1			1	
10:45 AM		1	0	0		0			0	
11:00 AM		0	0	2		1			1	
11:15 AM		1	1	0		1			1	
11:30 AM		2	0	1		1			1	
11:45 AM		0	1	0		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		3	3	1		2			2	
12:15 PM		2	0	2		1			1	
12:30 PM		0	0	0		0			0	
12:45 PM		1	0	0		0			0	
1:00 PM		0	0	2		1			1	
1:15 PM		0	0	0		0			0	
1:30 PM		0	0	1		0			0	
1:45 PM		2	2	0		1			1	
2:00 PM		0	0	0		0			0	
2:15 PM		1	0	0		0			0	
2:30 PM		1	0	0		0			0	
2:45 PM		0	0	0		0			0	
3:00 PM		0	1	2		1			1	
3:15 PM		0	0	1		0			0	
3:30 PM		2	1	0		1			1	
3:45 PM		0	0	0		0			0	
4:00 PM		0	0	1		0			0	
4:15 PM		1	1	0		1			1	
4:30 PM		1	1	4		2			2	
4:45 PM		0	2	0		1			1	
5:00 PM		3	1	2		2			2	
5:15 PM		1	0	0		0			0	
5:30 PM		0	2	0		1			1	
5:45 PM		0	0	0		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Driveway 1 SPECIFIC LOCATION: Driveway CITY/STATE: Duarte, CA						QC JOB #: 13634465 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		0	0	0		0			0	
6:15 PM		0	0	0		0			0	
6:30 PM		0	0	0		0			0	
6:45 PM		0	0	0		0			0	
7:00 PM		0	0	0		0			0	
7:15 PM		0	0	0		0			0	
7:30 PM		0	0	0		0			0	
7:45 PM		0	0	0		0			0	
8:00 PM		0	0	0		0			0	
8:15 PM		0	0	0		0			0	
8:30 PM		0	0	0		0			0	
8:45 PM		0	0	0		0			0	
9:00 PM		0	0	0		0			0	
9:15 PM		0	0	0		0			0	
9:30 PM		0	0	0		0			0	
9:45 PM		0	0	0		0			0	
10:00 PM		0	0	0		0			0	
10:15 PM		0	0	0		0			0	
10:30 PM		0	0	0		0			0	
10:45 PM		0	0	0		0			0	
11:00 PM		0	0	0		0			0	
11:15 PM		0	0	0		0			0	
11:30 PM		0	0	0		0			0	
11:45 PM		0	0	0		0			0	
Day Total		29	25	27		25			25	
% Weekday Average		116.0%	100.0%	108.0%						
% Week Average		116.0%	100.0%	108.0%		100.0%				
AM Peak		7:15 AM	8:30 AM	11:00 AM		7:15 AM			7:15 AM	
Volume		2	3	2		2			2	
PM Peak		12:00 PM	12:00 PM	4:30 PM		12:00 PM			12:00 PM	
Volume		3	3	4		2			2	
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		1	2	3		2			2	
12:15 AM		1	0	1		1			1	
12:30 AM		1	1	4		2			2	
12:45 AM		0	0	0		0			0	
1:00 AM		4	0	0		1			1	
1:15 AM		0	0	0		0			0	
1:30 AM		0	0	0		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		0	0	0		0			0	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		0	0	0		0			0	
4:45 AM		0	0	0		0			0	
5:00 AM		0	0	0		0			0	
5:15 AM		0	0	0		0			0	
5:30 AM		0	0	0		0			0	
5:45 AM		0	0	0		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		0	0	0		0			0	
6:15 AM		0	0	0		0			0	
6:30 AM		0	0	0		0			0	
6:45 AM		0	0	0		0			0	
7:00 AM		0	0	0		0			0	
7:15 AM		0	0	0		0			0	
7:30 AM		0	0	0		0			0	
7:45 AM		0	0	0		0			0	
8:00 AM		0	0	0		0			0	
8:15 AM		0	0	0		0			0	
8:30 AM		0	0	0		0			0	
8:45 AM		0	0	0		0			0	
9:00 AM		1	0	1		1			1	
9:15 AM		6	6	10		7			7	
9:30 AM		6	4	5		5			5	
9:45 AM		21	27	23		24			24	
10:00 AM		16	12	14		14			14	
10:15 AM		29	27	37		31			31	
10:30 AM		44	37	43		41			41	
10:45 AM		56	58	68		61			61	
11:00 AM		44	62	51		52			52	
11:15 AM		63	71	70		68			68	
11:30 AM		64	63	53		60			60	
11:45 AM		98	102	78		93			93	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		91	82	67		80			80	
12:15 PM		90	89	91		90			90	
12:30 PM		56	56	82		65			65	
12:45 PM		60	61	66		62			62	
1:00 PM		69	46	44		53			53	
1:15 PM		49	44	60		51			51	
1:30 PM		36	34	22		31			31	
1:45 PM		23	20	19		21			21	
2:00 PM		23	15	17		18			18	
2:15 PM		28	22	27		26			26	
2:30 PM		19	9	20		16			16	
2:45 PM		12	14	14		13			13	
3:00 PM		11	10	6		9			9	
3:15 PM		7	11	4		7			7	
3:30 PM		15	7	7		10			10	
3:45 PM		16	11	10		12			12	
4:00 PM		13	12	10		12			12	
4:15 PM		10	15	12		12			12	
4:30 PM		18	15	15		16			16	
4:45 PM		13	21	14		16			16	
5:00 PM		14	21	13		16			16	
5:15 PM		14	13	15		14			14	
5:30 PM		14	13	12		13			13	
5:45 PM		11	11	12		11			11	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: EB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		4	12	8		8			8	
6:15 PM		13	11	9		11			11	
6:30 PM		20	12	14		15			15	
6:45 PM		13	15	8		12			12	
7:00 PM		10	13	15		13			13	
7:15 PM		6	6	7		6			6	
7:30 PM		7	11	6		8			8	
7:45 PM		9	12	8		10			10	
8:00 PM		10	6	2		6			6	
8:15 PM		6	6	7		6			6	
8:30 PM		14	13	17		15			15	
8:45 PM		15	11	10		12			12	
9:00 PM		10	9	15		11			11	
9:15 PM		9	4	5		6			6	
9:30 PM		3	4	6		4			4	
9:45 PM		6	2	5		4			4	
10:00 PM		3	4	2		3			3	
10:15 PM		5	6	6		6			6	
10:30 PM		6	7	7		7			7	
10:45 PM		8	7	6		7			7	
11:00 PM		2	6	0		3			3	
11:15 PM		2	1	3		2			2	
11:30 PM		2	4	2		3			3	
11:45 PM		3	1	1		2			2	
Day Total		1353	1307	1289		1317			1317	
% Weekday Average		102.7%	99.2%	97.9%						
% Week Average		102.7%	99.2%	97.9%		100.0%				
AM Peak		11:45 AM	11:45 AM	11:45 AM		11:45 AM			11:45 AM	
Volume		98	102	78		93			93	
PM Peak		12:00 PM	12:15 PM	12:15 PM		12:15 PM			12:15 PM	
Volume		91	89	91		90			90	
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		7	2	6		5			5	
12:15 AM		1	0	3		1			1	
12:30 AM		1	1	2		1			1	
12:45 AM		0	0	0		0			0	
1:00 AM		2	0	0		1			1	
1:15 AM		0	0	0		0			0	
1:30 AM		0	0	0		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		0	0	0		0			0	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		1	0	1		1			1	
4:45 AM		0	0	0		0			0	
5:00 AM		0	0	0		0			0	
5:15 AM		0	0	0		0			0	
5:30 AM		0	0	0		0			0	
5:45 AM		0	0	0		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		0	0	0		0			0	
6:15 AM		0	0	0		0			0	
6:30 AM		0	0	0		0			0	
6:45 AM		0	0	0		0			0	
7:00 AM		0	0	0		0			0	
7:15 AM		0	0	0		0			0	
7:30 AM		0	0	0		0			0	
7:45 AM		0	0	0		0			0	
8:00 AM		0	0	0		0			0	
8:15 AM		0	0	0		0			0	
8:30 AM		0	0	0		0			0	
8:45 AM		0	0	0		0			0	
9:00 AM		0	0	0		0			0	
9:15 AM		1	1	1		1			1	
9:30 AM		1	1	0		1			1	
9:45 AM		1	3	1		2			2	
10:00 AM		0	3	1		1			1	
10:15 AM		3	3	5		4			4	
10:30 AM		4	2	4		3			3	
10:45 AM		1	4	4		3			3	
11:00 AM		0	1	4		2			2	
11:15 AM		5	5	6		5			5	
11:30 AM		6	6	8		7			7	
11:45 AM		11	11	8		10			10	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		7	6	8		7			7	
12:15 PM		10	7	12		10			10	
12:30 PM		5	8	7		7			7	
12:45 PM		8	8	12		9			9	
1:00 PM		6	5	7		6			6	
1:15 PM		7	4	6		6			6	
1:30 PM		8	2	7		6			6	
1:45 PM		8	6	7		7			7	
2:00 PM		7	9	7		8			8	
2:15 PM		4	8	10		7			7	
2:30 PM		9	6	6		7			7	
2:45 PM		9	6	4		6			6	
3:00 PM		4	5	10		6			6	
3:15 PM		9	10	9		9			9	
3:30 PM		15	14	9		13			13	
3:45 PM		10	12	32		18			18	
4:00 PM		18	23	21		21			21	
4:15 PM		13	20	20		18			18	
4:30 PM		11	15	15		14			14	
4:45 PM		13	13	13		13			13	
5:00 PM		8	21	16		15			15	
5:15 PM		12	15	15		14			14	
5:30 PM		16	12	12		13			13	
5:45 PM		21	21	16		19			19	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 2 SPECIFIC LOCATION: Drwy Tube 2 CITY/STATE: Duarte, CA						QC JOB #: 13634464 DIRECTION: WB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		21	20	25		22			22	
6:15 PM		14	17	20		17			17	
6:30 PM		29	22	21		24			24	
6:45 PM		22	15	11		16			16	
7:00 PM		20	20	24		21			21	
7:15 PM		18	17	23		19			19	
7:30 PM		34	30	30		31			31	
7:45 PM		27	29	30		29			29	
8:00 PM		51	61	53		55			55	
8:15 PM		46	35	46		42			42	
8:30 PM		79	61	62		67			67	
8:45 PM		58	61	67		62			62	
9:00 PM		99	98	96		98			98	
9:15 PM		82	76	76		78			78	
9:30 PM		58	61	80		66			66	
9:45 PM		42	48	56		49			49	
10:00 PM		37	46	39		41			41	
10:15 PM		34	34	28		32			32	
10:30 PM		31	39	29		33			33	
10:45 PM		23	22	14		20			20	
11:00 PM		15	15	19		16			16	
11:15 PM		22	15	14		17			17	
11:30 PM		16	17	15		16			16	
11:45 PM		12	11	18		14			14	
Day Total		1173	1169	1231		1192			1192	
% Weekday Average		98.4%	98.1%	103.3%						
% Week Average		98.4%	98.1%	103.3%		100.0%				
AM Peak		11:45 AM	11:45 AM	11:30 AM		11:45 AM			11:45 AM	
Volume		11	11	8		10			10	
PM Peak		9:00 PM	9:00 PM	9:00 PM		9:00 PM			9:00 PM	
Volume		99	98	96		98			98	
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		0	0	0		0			0	
12:15 AM		0	0	0		0			0	
12:30 AM		0	0	0		0			0	
12:45 AM		0	0	0		0			0	
1:00 AM		0	0	2		1			1	
1:15 AM		1	0	0		0			0	
1:30 AM		0	0	1		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		1	0	1		1			1	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		0	0	0		0			0	
4:45 AM		0	0	0		0			0	
5:00 AM		0	2	0		1			1	
5:15 AM		2	1	1		1			1	
5:30 AM		1	3	5		3			3	
5:45 AM		2	2	1		2			2	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		2	5	3		3			3	
6:15 AM		2	2	3		2			2	
6:30 AM		3	7	5		5			5	
6:45 AM		7	11	3		7			7	
7:00 AM		12	8	9		10			10	
7:15 AM		6	7	5		6			6	
7:30 AM		15	21	19		18			18	
7:45 AM		20	19	18		19			19	
8:00 AM		22	8	13		14			14	
8:15 AM		14	10	13		12			12	
8:30 AM		12	17	8		12			12	
8:45 AM		11	6	9		9			9	
9:00 AM		11	6	8		8			8	
9:15 AM		14	17	8		13			13	
9:30 AM		9	15	9		11			11	
9:45 AM		9	11	13		11			11	
10:00 AM		6	6	10		7			7	
10:15 AM		7	15	11		11			11	
10:30 AM		10	8	8		9			9	
10:45 AM		13	5	18		12			12	
11:00 AM		21	13	9		14			14	
11:15 AM		16	15	15		15			15	
11:30 AM		20	20	20		20			20	
11:45 AM		18	23	24		22			22	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		23	31	23		26			26	
12:15 PM		17	21	19		19			19	
12:30 PM		21	18	19		19			19	
12:45 PM		11	16	22		16			16	
1:00 PM		15	13	16		15			15	
1:15 PM		18	17	20		18			18	
1:30 PM		15	13	22		17			17	
1:45 PM		16	23	19		19			19	
2:00 PM		23	20	27		23			23	
2:15 PM		27	27	22		25			25	
2:30 PM		40	36	35		37			37	
2:45 PM		36	25	30		30			30	
3:00 PM		30	26	27		28			28	
3:15 PM		28	29	28		28			28	
3:30 PM		53	52	60		55			55	
3:45 PM		39	38	42		40			40	
4:00 PM		49	54	49		51			51	
4:15 PM		51	38	54		48			48	
4:30 PM		83	86	55		75			75	
4:45 PM		76	72	69		72			72	
5:00 PM		81	95	106		94			94	
5:15 PM		66	77	68		70			70	
5:30 PM		67	78	59		68			68	
5:45 PM		45	58	51		51			51	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		50	50	70		57			57	
6:15 PM		48	41	35		41			41	
6:30 PM		34	43	46		41			41	
6:45 PM		41	44	37		41			41	
7:00 PM		31	34	38		34			34	
7:15 PM		25	33	27		28			28	
7:30 PM		53	38	47		46			46	
7:45 PM		38	33	47		39			39	
8:00 PM		11	4	2		6			6	
8:15 PM		2	3	0		2			2	
8:30 PM		1	1	4		2			2	
8:45 PM		2	5	4		4			4	
9:00 PM		0	1	1		1			1	
9:15 PM		2	1	1		1			1	
9:30 PM		3	0	1		1			1	
9:45 PM		1	0	1		1			1	
10:00 PM		0	0	0		0			0	
10:15 PM		0	0	1		0			0	
10:30 PM		0	0	0		0			0	
10:45 PM		0	0	0		0			0	
11:00 PM		0	0	0		0			0	
11:15 PM		0	0	0		0			0	
11:30 PM		0	0	0		0			0	
11:45 PM		0	0	0		0			0	
Day Total		1559	1577	1576		1568			1568	
% Weekday Average		99.4%	100.6%	100.5%						
% Week Average		99.4%	100.6%	100.5%		100.0%				
AM Peak		8:00 AM	11:45 AM	11:45 AM		11:45 AM			11:45 AM	
Volume		22	23	24		22			22	
PM Peak		4:30 PM	5:00 PM	5:00 PM		5:00 PM			5:00 PM	
Volume		83	95	106		94			94	
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		0	0	0		0			0	
12:15 AM		0	0	0		0			0	
12:30 AM		0	0	0		0			0	
12:45 AM		0	0	0		0			0	
1:00 AM		0	0	2		1			1	
1:15 AM		1	0	0		0			0	
1:30 AM		0	0	1		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		1	0	1		1			1	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		0	0	0		0			0	
4:45 AM		0	0	0		0			0	
5:00 AM		0	0	0		0			0	
5:15 AM		9	6	7		7			7	
5:30 AM		17	21	21		20			20	
5:45 AM		21	21	22		21			21	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		14	10	13		12			12	
6:15 AM		22	27	27		25			25	
6:30 AM		57	44	58		53			53	
6:45 AM		74	71	92		79			79	
7:00 AM		40	48	39		42			42	
7:15 AM		51	64	56		57			57	
7:30 AM		62	50	70		61			61	
7:45 AM		70	82	73		75			75	
8:00 AM		74	77	67		73			73	
8:15 AM		78	87	91		85			85	
8:30 AM		63	74	59		65			65	
8:45 AM		78	71	66		72			72	
9:00 AM		56	61	55		57			57	
9:15 AM		51	52	45		49			49	
9:30 AM		23	33	42		33			33	
9:45 AM		30	31	31		31			31	
10:00 AM		18	26	24		23			23	
10:15 AM		17	22	29		23			23	
10:30 AM		23	17	20		20			20	
10:45 AM		24	17	20		20			20	
11:00 AM		12	15	15		14			14	
11:15 AM		10	19	14		14			14	
11:30 AM		16	11	24		17			17	
11:45 AM		18	19	18		18			18	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		21	12	20		18			18	
12:15 PM		24	18	28		23			23	
12:30 PM		14	22	16		17			17	
12:45 PM		18	26	23		22			22	
1:00 PM		13	31	20		21			21	
1:15 PM		20	19	12		17			17	
1:30 PM		22	16	21		20			20	
1:45 PM		19	17	18		18			18	
2:00 PM		9	13	10		11			11	
2:15 PM		16	21	20		19			19	
2:30 PM		15	18	26		20			20	
2:45 PM		17	24	20		20			20	
3:00 PM		15	20	15		17			17	
3:15 PM		15	13	20		16			16	
3:30 PM		20	7	10		12			12	
3:45 PM		14	9	13		12			12	
4:00 PM		13	11	13		12			12	
4:15 PM		9	12	14		12			12	
4:30 PM		11	12	15		13			13	
4:45 PM		21	24	14		20			20	
5:00 PM		14	18	17		16			16	
5:15 PM		12	9	4		8			8	
5:30 PM		10	9	17		12			12	
5:45 PM		13	9	9		10			10	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 3 SPECIFIC LOCATION: Drwy Tube 3 CITY/STATE: Duarte, CA						QC JOB #: 13634463 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		12	20	9		14			14	
6:15 PM		23	9	14		15			15	
6:30 PM		26	18	25		23			23	
6:45 PM		23	23	29		25			25	
7:00 PM		4	14	5		8			8	
7:15 PM		10	8	11		10			10	
7:30 PM		13	11	11		12			12	
7:45 PM		8	13	4		8			8	
8:00 PM		2	4	1		2			2	
8:15 PM		2	2	0		1			1	
8:30 PM		1	2	2		2			2	
8:45 PM		3	4	5		4			4	
9:00 PM		0	1	1		1			1	
9:15 PM		0	0	1		0			0	
9:30 PM		2	0	1		1			1	
9:45 PM		1	0	1		1			1	
10:00 PM		0	0	0		0			0	
10:15 PM		0	0	1		0			0	
10:30 PM		0	0	0		0			0	
10:45 PM		0	1	0		0			0	
11:00 PM		0	0	0		0			0	
11:15 PM		0	0	0		0			0	
11:30 PM		0	0	0		0			0	
11:45 PM		0	0	0		0			0	
Day Total		1535	1596	1618		1581			1581	
% Weekday Average		97.1%	100.9%	102.3%						
% Week Average		97.1%	100.9%	102.3%		100.0%				
AM Peak		8:15 AM	8:15 AM	6:45 AM		8:15 AM			8:15 AM	
Volume		78	87	92		85			85	
PM Peak		6:30 PM	1:00 PM	6:45 PM		6:45 PM			6:45 PM	
Volume		26	31	29		25			25	
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		16	20	11		16			16	
12:15 AM		5	4	18		9			9	
12:30 AM		42	35	34		37			37	
12:45 AM		2	24	15		14			14	
1:00 AM		16	10	22		16			16	
1:15 AM		6	16	9		10			10	
1:30 AM		10	7	12		10			10	
1:45 AM		5	2	6		4			4	
2:00 AM		1	4	6		4			4	
2:15 AM		4	7	9		7			7	
2:30 AM		18	17	17		17			17	
2:45 AM		4	5	9		6			6	
3:00 AM		2	1	3		2			2	
3:15 AM		0	3	2		2			2	
3:30 AM		1	2	0		1			1	
3:45 AM		2	3	1		2			2	
4:00 AM		0	1	3		1			1	
4:15 AM		8	5	7		7			7	
4:30 AM		5	8	5		6			6	
4:45 AM		5	6	1		4			4	
5:00 AM		4	4	0		3			3	
5:15 AM		2	1	4		2			2	
5:30 AM		6	5	2		4			4	
5:45 AM		0	0	1		0			0	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		3	1	4		3			3	
6:15 AM		3	6	3		4			4	
6:30 AM		1	6	3		3			3	
6:45 AM		1	4	2		2			2	
7:00 AM		2	5	6		4			4	
7:15 AM		8	5	3		5			5	
7:30 AM		14	7	15		12			12	
7:45 AM		16	8	15		13			13	
8:00 AM		13	8	7		9			9	
8:15 AM		5	9	12		9			9	
8:30 AM		19	19	19		19			19	
8:45 AM		32	12	25		23			23	
9:00 AM		13	17	34		21			21	
9:15 AM		20	14	16		17			17	
9:30 AM		13	14	19		15			15	
9:45 AM		29	20	16		22			22	
10:00 AM		28	16	17		20			20	
10:15 AM		26	39	29		31			31	
10:30 AM		38	33	37		36			36	
10:45 AM		33	44	25		34			34	
11:00 AM		31	56	39		42			42	
11:15 AM		45	43	43		44			44	
11:30 AM		63	43	35		47			47	
11:45 AM		55	50	41		49			49	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		57	47	67		57			57	
12:15 PM		67	59	50		59			59	
12:30 PM		60	46	62		56			56	
12:45 PM		57	46	71		58			58	
1:00 PM		72	63	55		63			63	
1:15 PM		40	71	70		60			60	
1:30 PM		52	54	71		59			59	
1:45 PM		63	51	46		53			53	
2:00 PM		42	35	47		41			41	
2:15 PM		42	37	39		39			39	
2:30 PM		61	40	40		47			47	
2:45 PM		54	41	44		46			46	
3:00 PM		46	52	63		54			54	
3:15 PM		49	55	33		46			46	
3:30 PM		61	48	42		50			50	
3:45 PM		50	58	67		58			58	
4:00 PM		57	74	63		65			65	
4:15 PM		74	51	55		60			60	
4:30 PM		85	52	64		67			67	
4:45 PM		65	36	74		58			58	
5:00 PM		68	72	70		70			70	
5:15 PM		75	52	79		69			69	
5:30 PM		59	58	68		62			62	
5:45 PM		53	67	49		56			56	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		63	70	62		65			65	
6:15 PM		38	44	59		47			47	
6:30 PM		50	55	45		50			50	
6:45 PM		44	50	73		56			56	
7:00 PM		41	39	30		37			37	
7:15 PM		35	23	21		26			26	
7:30 PM		23	47	34		35			35	
7:45 PM		16	23	30		23			23	
8:00 PM		33	57	22		37			37	
8:15 PM		21	49	41		37			37	
8:30 PM		23	30	31		28			28	
8:45 PM		29	22	28		26			26	
9:00 PM		106	66	77		83			83	
9:15 PM		87	71	56		71			71	
9:30 PM		93	76	76		82			82	
9:45 PM		46	29	58		44			44	
10:00 PM		36	39	29		35			35	
10:15 PM		15	37	18		23			23	
10:30 PM		39	42	33		38			38	
10:45 PM		18	21	18		19			19	
11:00 PM		17	27	15		20			20	
11:15 PM		26	17	19		21			21	
11:30 PM		15	23	15		18			18	
11:45 PM		14	14	18		15			15	
Day Total		3012	2905	2959		2957			2957	
% Weekday Average		101.9%	98.2%	100.1%						
% Week Average		101.9%	98.2%	100.1%		100.0%				
AM Peak		11:30 AM	11:00 AM	11:15 AM		11:45 AM			11:45 AM	
Volume		63	56	43		49			49	
PM Peak		9:00 PM	9:30 PM	5:15 PM		9:00 PM			9:00 PM	
Volume		106	76	79		83			83	
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		5	5	6		5			5	
12:15 AM		4	5	8		6			6	
12:30 AM		8	11	16		12			12	
12:45 AM		2	8	5		5			5	
1:00 AM		1	1	1		1			1	
1:15 AM		2	0	2		1			1	
1:30 AM		1	2	2		2			2	
1:45 AM		2	2	1		2			2	
2:00 AM		1	0	2		1			1	
2:15 AM		1	0	1		1			1	
2:30 AM		5	4	4		4			4	
2:45 AM		4	1	1		2			2	
3:00 AM		1	2	2		2			2	
3:15 AM		2	2	3		2			2	
3:30 AM		1	2	2		2			2	
3:45 AM		4	7	8		6			6	
4:00 AM		1	2	1		1			1	
4:15 AM		3	1	2		2			2	
4:30 AM		3	1	1		2			2	
4:45 AM		7	10	6		8			8	
5:00 AM		5	7	3		5			5	
5:15 AM		5	8	11		8			8	
5:30 AM		8	5	7		7			7	
5:45 AM		11	15	14		13			13	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		17	14	18		16			16	
6:15 AM		17	12	16		15			15	
6:30 AM		8	8	6		7			7	
6:45 AM		6	6	8		7			7	
7:00 AM		13	13	8		11			11	
7:15 AM		18	11	23		17			17	
7:30 AM		19	15	16		17			17	
7:45 AM		18	36	40		31			31	
8:00 AM		32	24	32		29			29	
8:15 AM		37	33	24		31			31	
8:30 AM		41	41	45		42			42	
8:45 AM		61	61	52		58			58	
9:00 AM		81	55	49		62			62	
9:15 AM		52	55	68		58			58	
9:30 AM		55	65	54		58			58	
9:45 AM		58	83	68		70			70	
10:00 AM		63	57	61		60			60	
10:15 AM		83	55	60		66			66	
10:30 AM		66	69	69		68			68	
10:45 AM		51	59	59		56			56	
11:00 AM		36	62	53		50			50	
11:15 AM		45	49	60		51			51	
11:30 AM		79	52	51		61			61	
11:45 AM		63	40	36		46			46	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		51	56	39		49			49	
12:15 PM		48	42	45		45			45	
12:30 PM		54	41	54		50			50	
12:45 PM		43	38	43		41			41	
1:00 PM		44	27	51		41			41	
1:15 PM		49	40	52		47			47	
1:30 PM		55	50	50		52			52	
1:45 PM		52	30	46		43			43	
2:00 PM		38	45	53		45			45	
2:15 PM		44	34	47		42			42	
2:30 PM		33	39	46		39			39	
2:45 PM		56	34	46		45			45	
3:00 PM		37	34	44		38			38	
3:15 PM		34	33	35		34			34	
3:30 PM		27	31	23		27			27	
3:45 PM		34	43	49		42			42	
4:00 PM		29	34	29		31			31	
4:15 PM		38	25	32		32			32	
4:30 PM		36	24	28		29			29	
4:45 PM		37	20	30		29			29	
5:00 PM		22	27	24		24			24	
5:15 PM		17	31	25		24			24	
5:30 PM		12	28	22		21			21	
5:45 PM		26	17	21		21			21	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 4 SPECIFIC LOCATION: Drwy Tube 4 CITY/STATE: Duarte, CA						QC JOB #: 13634461 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 19-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		18	32	25		25			25	
6:15 PM		15	10	13		13			13	
6:30 PM		20	20	19		20			20	
6:45 PM		28	14	14		19			19	
7:00 PM		12	20	16		16			16	
7:15 PM		18	12	10		13			13	
7:30 PM		13	7	17		12			12	
7:45 PM		17	10	18		15			15	
8:00 PM		19	21	15		18			18	
8:15 PM		12	24	10		15			15	
8:30 PM		11	10	9		10			10	
8:45 PM		10	9	14		11			11	
9:00 PM		18	19	29		22			22	
9:15 PM		19	18	24		20			20	
9:30 PM		27	31	18		25			25	
9:45 PM		17	11	23		17			17	
10:00 PM		13	11	17		14			14	
10:15 PM		11	16	8		12			12	
10:30 PM		14	21	14		16			16	
10:45 PM		9	11	8		9			9	
11:00 PM		9	14	9		11			11	
11:15 PM		7	12	6		8			8	
11:30 PM		6	5	8		6			6	
11:45 PM		9	6	4		6			6	
Day Total		2374	2263	2367		2331			2331	
% Weekday Average		101.8%	97.1%	101.5%						
% Week Average		101.8%	97.1%	101.5%		100.0%				
AM Peak		10:15 AM	9:45 AM	10:30 AM		9:45 AM			9:45 AM	
Volume		83	83	69		70			70	
PM Peak		2:45 PM	12:00 PM	12:30 PM		1:30 PM			1:30 PM	
Volume		56	56	54		52			52	
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		0	0	0		0			0	
12:15 AM		0	0	0		0			0	
12:30 AM		0	0	0		0			0	
12:45 AM		0	0	0		0			0	
1:00 AM		0	0	0		0			0	
1:15 AM		0	0	0		0			0	
1:30 AM		0	0	0		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		0	0	0		0			0	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		0	0	0		0			0	
4:45 AM		0	0	0		0			0	
5:00 AM		0	0	0		0			0	
5:15 AM		0	0	5		2			2	
5:30 AM		0	4	3		2			2	
5:45 AM		1	1	4		2			2	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		5	4	5		5			5	
6:15 AM		7	10	5		7			7	
6:30 AM		7	6	8		7			7	
6:45 AM		7	9	8		8			8	
7:00 AM		7	8	6		7			7	
7:15 AM		8	9	9		9			9	
7:30 AM		8	20	15		14			14	
7:45 AM		9	10	11		10			10	
8:00 AM		13	18	14		15			15	
8:15 AM		7	11	8		9			9	
8:30 AM		13	16	9		13			13	
8:45 AM		7	4	10		7			7	
9:00 AM		10	4	6		7			7	
9:15 AM		8	6	6		7			7	
9:30 AM		8	11	6		8			8	
9:45 AM		4	19	7		10			10	
10:00 AM		1	11	12		8			8	
10:15 AM		7	18	17		14			14	
10:30 AM		11	9	19		13			13	
10:45 AM		13	11	12		12			12	
11:00 AM		15	7	11		11			11	
11:15 AM		13	14	9		12			12	
11:30 AM		12	19	11		14			14	
11:45 AM		18	14	24		19			19	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		19	10	15		15			15	
12:15 PM		20	17	19		19			19	
12:30 PM		19	17	11		16			16	
12:45 PM		20	10	10		13			13	
1:00 PM		11	15	15		14			14	
1:15 PM		11	22	11		15			15	
1:30 PM		14	15	16		15			15	
1:45 PM		14	22	14		17			17	
2:00 PM		24	38	13		25			25	
2:15 PM		17	18	17		17			17	
2:30 PM		28	30	44		34			34	
2:45 PM		13	13	19		15			15	
3:00 PM		24	51	39		38			38	
3:15 PM		34	27	31		31			31	
3:30 PM		69	61	52		61			61	
3:45 PM		48	41	39		43			43	
4:00 PM		70	63	67		67			67	
4:15 PM		38	62	51		50			50	
4:30 PM		92	79	85		85			85	
4:45 PM		67	60	73		67			67	
5:00 PM		102	126	109		112			112	
5:15 PM		76	89	85		83			83	
5:30 PM		56	49	65		57			57	
5:45 PM		54	44	50		49			49	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: NB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		51	69	38		53			53	
6:15 PM		29	41	21		30			30	
6:30 PM		21	35	37		31			31	
6:45 PM		14	21	8		14			14	
7:00 PM		19	13	27		20			20	
7:15 PM		6	19	11		12			12	
7:30 PM		33	21	21		25			25	
7:45 PM		20	7	14		14			14	
8:00 PM		4	2	3		3			3	
8:15 PM		1	0	0		0			0	
8:30 PM		0	0	0		0			0	
8:45 PM		0	0	0		0			0	
9:00 PM		0	0	0		0			0	
9:15 PM		0	0	0		0			0	
9:30 PM		0	0	0		0			0	
9:45 PM		0	0	0		0			0	
10:00 PM		0	0	0		0			0	
10:15 PM		0	0	0		0			0	
10:30 PM		0	0	0		0			0	
10:45 PM		0	0	0		0			0	
11:00 PM		0	0	0		0			0	
11:15 PM		0	0	0		0			0	
11:30 PM		0	0	0		0			0	
11:45 PM		0	0	0		0			0	
Day Total		1357	1480	1390		1412			1412	
% Weekday Average		96.1%	104.8%	98.4%						
% Week Average		96.1%	104.8%	98.4%		100.0%				
AM Peak		11:45 AM	7:30 AM	11:45 AM		11:45 AM			11:45 AM	
Volume		18	20	24		19			19	
PM Peak		5:00 PM	5:00 PM	5:00 PM		5:00 PM			5:00 PM	
Volume		102	126	109		112			112	
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		0	0	0		0			0	
12:15 AM		0	0	0		0			0	
12:30 AM		0	0	0		0			0	
12:45 AM		0	0	0		0			0	
1:00 AM		0	0	0		0			0	
1:15 AM		0	0	0		0			0	
1:30 AM		0	0	0		0			0	
1:45 AM		0	0	0		0			0	
2:00 AM		0	0	0		0			0	
2:15 AM		0	0	0		0			0	
2:30 AM		0	0	0		0			0	
2:45 AM		0	0	0		0			0	
3:00 AM		0	0	0		0			0	
3:15 AM		0	0	0		0			0	
3:30 AM		0	0	0		0			0	
3:45 AM		0	0	0		0			0	
4:00 AM		0	0	0		0			0	
4:15 AM		0	0	0		0			0	
4:30 AM		0	0	0		0			0	
4:45 AM		0	0	0		0			0	
5:00 AM		0	0	0		0			0	
5:15 AM		8	6	7		7			7	
5:30 AM		6	13	20		13			13	
5:45 AM		24	26	15		22			22	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM		22	26	24		24			24	
6:15 AM		30	29	33		31			31	
6:30 AM		58	49	65		57			57	
6:45 AM		68	78	78		75			75	
7:00 AM		53	93	55		67			67	
7:15 AM		65	52	54		57			57	
7:30 AM		70	65	77		71			71	
7:45 AM		75	100	85		87			87	
8:00 AM		101	87	78		89			89	
8:15 AM		74	86	81		80			80	
8:30 AM		74	65	63		67			67	
8:45 AM		68	44	49		54			54	
9:00 AM		28	37	38		34			34	
9:15 AM		31	36	25		31			31	
9:30 AM		24	18	31		24			24	
9:45 AM		18	19	29		22			22	
10:00 AM		9	15	10		11			11	
10:15 AM		10	11	15		12			12	
10:30 AM		8	12	9		10			10	
10:45 AM		13	12	13		13			13	
11:00 AM		15	5	6		9			9	
11:15 AM		7	7	7		7			7	
11:30 AM		6	4	8		6			6	
11:45 AM		9	12	13		11			11	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM		9	16	8		11			11	
12:15 PM		12	11	12		12			12	
12:30 PM		11	16	10		12			12	
12:45 PM		20	23	14		19			19	
1:00 PM		11	14	7		11			11	
1:15 PM		9	6	9		8			8	
1:30 PM		9	7	12		9			9	
1:45 PM		9	18	17		15			15	
2:00 PM		16	15	19		17			17	
2:15 PM		8	12	10		10			10	
2:30 PM		7	11	15		11			11	
2:45 PM		9	16	12		12			12	
3:00 PM		7	8	10		8			8	
3:15 PM		12	8	8		9			9	
3:30 PM		9	8	12		10			10	
3:45 PM		8	8	10		9			9	
4:00 PM		4	4	5		4			4	
4:15 PM		4	8	8		7			7	
4:30 PM		10	11	8		10			10	
4:45 PM		11	10	5		9			9	
5:00 PM		9	21	12		14			14	
5:15 PM		1	15	7		8			8	
5:30 PM		11	6	8		8			8	
5:45 PM		8	3	2		4			4	
Day Total										
% Weekday Average										
% Week Average										
AM Peak Volume										
PM Peak Volume										
<i>Comments:</i>										

LOCATION: Drwy Tube 5 SPECIFIC LOCATION: Drwy Tube 5 CITY/STATE: Duarte, CA						QC JOB #: 13634462 DIRECTION: SB DATE: Nov 17 2015 - Nov 19 2015				
Start Time	Mon 17-Nov-15	Tue 18-Nov-15	Wed 18-Nov-15	Thu 19-Nov-15	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM		5	6	5		5			5	
6:15 PM		4	4	5		4			4	
6:30 PM		10	8	4		7			7	
6:45 PM		16	14	14		15			15	
7:00 PM		6	6	2		5			5	
7:15 PM		1	3	1		2			2	
7:30 PM		2	0	2		1			1	
7:45 PM		2	3	0		2			2	
8:00 PM		2	0	1		1			1	
8:15 PM		2	0	0		1			1	
8:30 PM		0	0	0		0			0	
8:45 PM		0	0	0		0			0	
9:00 PM		0	0	0		0			0	
9:15 PM		0	0	0		0			0	
9:30 PM		0	0	0		0			0	
9:45 PM		0	0	0		0			0	
10:00 PM		0	0	0		0			0	
10:15 PM		0	0	0		0			0	
10:30 PM		0	0	0		0			0	
10:45 PM		0	0	0		0			0	
11:00 PM		0	0	0		0			0	
11:15 PM		0	0	0		0			0	
11:30 PM		0	0	0		0			0	
11:45 PM		0	0	0		0			0	
Day Total		1248	1326	1262		1281			1281	
% Weekday Average		97.4%	103.5%	98.5%						
% Week Average		97.4%	103.5%	98.5%		100.0%				
AM Peak		8:00 AM	7:45 AM	7:45 AM		8:00 AM			8:00 AM	
Volume		101	100	85		89			89	
PM Peak		12:45 PM	12:45 PM	2:00 PM		12:45 PM			12:45 PM	
Volume		20	23	19		19			19	
<i>Comments:</i>										

APPENDIX C: INTERSECTION VOLUMES



**TABLE C-1
EXISTING
INTERSECTION TURNING MOVEMENT VOLUMES**

Int #	N/S Street	E/W Street	AM PEAK HOUR									PM PEAK HOUR														
			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
1	Live Oak Ave	Arrow Hwy	0	0	0	0	1721	94	149	0	1109	605	395	0	0	0	0	534	262	105	0	783	2088	815	0	
2	Mountain Ave	Central Ave	139	463	0	359	669	230	0	463	180	0	0	0	205	731	0	296	222	189	0	471	183	0	0	
3	Mountain Ave	Evergreen Ave	0	393	294	0	0	0	142	361	0	183	269	268	0	527	400	0	0	0	178	447	0	138	1028	206
4	Mountain Ave	Duarte Rd	132	132	47	121	364	96	122	242	81	31	213	169	243	260	95	108	233	64	87	166	29	75	445	228
5	Bateman Ave/Avenida Barbosa	Buena Vista St/Alpha St	4	108	7	11	8	184	611	266	58	12	7	5	1	256	14	11	15	558	341	121	12	77	22	4
6	Avenida Barbosa	Arrow Hwy	127	0	168	658	1711	0	0	0	0	0	309	236	337	0	550	224	449	0	0	0	0	0	665	248
7	I-605 SB On-ramp	Live Oak Ave	0	0	0	0	1279	541	0	0	0	400	288	0	0	0	0	927	556	0	0	0	0	1054	1073	0
8	I-605 NB Off-ramp	Live Oak Ave	507	0	0	0	1250	0	615	0	0	0	321	0	472	0	0	0	964	0	518	0	0	0	1146	0
9	I-605 SB Off-ramp	Arrow Hwy	570	0	380	0	1735	0	0	0	0	0	499	0	241	0	236	0	430	0	0	0	0	0	1244	0
10	Buena Vista St	Huntington Dr	78	216	38	106	1437	82	109	244	161	124	252	52	80	229	137	62	499	156	115	262	183	208	1072	104
11	Buena Vista St	Central Ave	22	406	40	278	135	370	291	275	38	43	22	0	33	524	87	246	121	250	207	327	45	142	88	5
12	Buena Vista St	I-210 WB On-ramp	223	592	0	0	0	0	0	604	67	0	0	0	235	682	0	0	0	0	0	579	260	0	0	0
13	Buena Vista St	Evergreen St/I-210 EB On-ramp	0	388	216	0	0	0	183	365	0	294	12	294	0	435	228	0	0	0	342	586	0	78	372	259
14	Buena Vista St	3 Ranch Rd	15	641	6	39	1	13	52	498	9	12	1	3	19	399	25	38	1	13	22	891	13	15	4	0
15	Buena Vista St	Duarte Rd	103	199	385	116	297	112	110	269	150	31	325	179	99	259	119	394	264	118	92	379	76	97	388	202
16	Buena Vista St	Village Rd	0	187	73	11	0	19	266	370	0	0	0	0	0	409	8	130	0	166	21	387	0	0	0	0
17	I-210 WB Off-ramp	Central Ave	6	0	0	4	494	0	66	0	285	0	346	6	21	0	2	4	303	0	103	0	302	0	360	11
18	Cinco Robles Dr	Duarte Rd	0	0	0	0	470	4	10	0	18	8	747	46	0	0	0	0	716	13	4	0	13	11	520	50
19	Village Rd	Duarte Rd	0	0	0	0	429	97	6	0	50	202	557	0	0	0	0	0	496	12	99	0	212	60	462	0
20	Duncannon Ave	Evergreen St	4	22	67	19	4	75	18	15	5	3	15	7	34	14	21	30	17	3	1	11	6	1	21	31
21	Hope Dr	Duarte Rd	0	0	0	0	480	44	15	0	42	156	398	0	0	0	0	0	357	11	20	0	155	50	515	0
22	Circle Rd/Employees	Duarte Rd	0	0	0	0	517	205	15	0	5	85	330	1	0	0	0	0	273	23	149	0	88	8	532	6
23	Highland Ave	Huntington Dr	39	177	57	68	1544	396	162	92	80	58	262	28	51	108	75	38	488	110	211	91	77	143	1064	32
24	Highland Ave	Central Ave	104	440	73	64	286	339	124	144	86	70	96	51	61	175	157	22	94	69	451	322	48	37	294	67
25	Highland Ave	Evergreen St	32	767	86	15	1	1	6	292	7	32	4	38	16	247	18	93	3	4	8	709	4	10	0	19
26	Highland Ave	Business Center Dr	20	724	40	13	0	12	34	281	6	4	0	13	5	237	17	23	0	38	24	667	13	10	1	20
27	I-605/Mt Olive Dr	Huntington Dr	91	286	54	123	1164	384	282	136	873	251	231	58	49	286	78	36	400	262	674	188	251	627	781	45

**TABLE C-2
PROJECT ONLY
INTERSECTION TURNING MOVEMENT VOLUMES**

Int #	N/S Street	E/W Street	AM PEAK HOUR												PM PEAK HOUR											
			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
1	Live Oak Ave	Arrow Hwy	0	0	0	0	1	12	74	0	0	0	9	0	0	0	0	0	8	66	12	0	0	0	1	0
2	Mountain Ave	Central Ave	0	18	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	16	0	0	0	0
3	Mountain Ave	Evergreen Ave	0	18	0	0	0	0	0	3	0	0	0	0	0	0	3	0	0	0	0	16	0	0	0	0
4	Mountain Ave	Duarte Rd	0	0	18	3	4	0	0	0	0	0	22	0	0	0	3	16	20	0	0	0	0	4	0	0
5	Bateman Ave/Avenida Barbosa	Buena Vista St/Alpha St	0	0	0	0	0	18	115	0	0	0	0	0	0	0	0	0	102	19	0	0	0	0	0	0
6	Avenida Barbosa	Arrow Hwy	13	0	5	31	0	0	0	0	0	0	0	83	74	0	28	5	0	0	0	0	0	0	0	14
7	I-605 SB On-ramp	Live Oak Ave	0	0	0	0	74	0	0	0	0	12	0	0	0	0	0	12	0	0	0	0	0	0	0	0
8	I-605 NB Off-ramp	Live Oak Ave	74	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0
9	I-605 SB Off-ramp	Arrow Hwy	0	0	0	0	31	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	28	0
10	Buena Vista St	Huntington Dr	0	6	0	0	0	12	1	1	4	22	0	0	0	1	0	0	0	2	5	5	20	4	0	0
11	Buena Vista St	Central Ave	0	40	0	0	0	74	0	5	0	0	0	0	0	7	0	0	0	12	0	30	0	0	0	0
12	Buena Vista St	I-210 WB On-ramp	0	115	0	0	0	0	0	5	18	0	0	0	0	19	0	0	0	0	0	30	100	0	0	0
13	Buena Vista St	Evergreen St/I-210 EB On-ramp	0	115	0	0	0	0	15	23	0	112	0	0	0	19	0	0	0	0	86	130	0	19	0	0
14	Buena Vista St	3 Ranch Rd	0	227	0	0	0	0	0	38	0	0	0	0	0	37	0	0	0	0	0	217	0	0	0	0
15	Buena Vista St	Duarte Rd	0	82	144	25	4	13	76	13	2	12	28	0	0	13	24	143	25	68	14	73	11	2	5	0
16	Buena Vista St	Village Rd	0	12	96	15	0	6	39	75	0	0	0	0	0	67	16	85	0	35	6	12	0	0	0	0
17	I-210 WB Off-ramp	Central Ave	0	0	0	0	0	0	16	0	74	0	0	0	0	0	0	0	0	0	3	0	12	0	0	0
18	Cinco Robles Dr	Duarte Rd	0	0	0	0	43	0	0	0	0	0	248	0	0	0	0	236	0	0	0	0	0	0	42	0
19	Village Rd	Duarte Rd	0	0	0	0	20	36	4	0	23	134	114	0	0	0	0	109	6	24	0	128	22	20	0	0
20	Duncannon Ave	Evergreen St	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Hope Dr	Duarte Rd	0	0	0	0	41	22	3	0	14	83	35	0	0	0	0	36	4	15	0	79	14	30	0	
22	Circle Rd/Employee	Duarte Rd	0	0	0	0	59	8	1	0	4	31	7	0	0	0	0	10	1	6	0	29	5	41	0	
23	Highland Ave	Huntington Dr	0	3	0	0	12	44	7	0	0	0	1	0	0	1	0	0	2	7	39	3	0	0	5	0
24	Highland Ave	Central Ave	0	47	0	0	0	4	1	7	0	16	0	0	0	8	0	0	0	1	4	42	0	3	0	0
25	Highland Ave	Evergreen St	0	67	0	0	0	0	0	8	0	0	0	0	0	11	0	0	0	0	0	46	0	0	0	0
26	Highland Ave	Business Center Dr	0	67	0	0	0	0	0	8	0	0	0	0	0	11	0	0	0	0	0	46	0	0	0	0
27	I-605/Mt Olive Dr	Huntington Dr	0	0	0	0	18	0	0	0	38	5	3	0	0	0	0	3	0	0	0	0	6	28	16	0

**TABLE C-3
EXISTING PLUS PROJECT
INTERSECTION TURNING MOVEMENT VOLUMES**

Int #	N/S Street	E/W Street	AM PEAK HOUR									PM PEAK HOUR														
			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
1	Live Oak Ave	Arrow Hwy	0	0	0	0	1722	106	223	0	1109	605	404	0	0	0	0	542	328	117	0	783	2088	816	0	
2	Mountain Ave	Central Ave	139	481	0	359	669	230	0	466	180	0	0	0	205	734	0	296	222	189	0	487	183	0	0	
3	Mountain Ave	Evergreen Ave	0	411	294	0	0	0	142	364	0	183	269	268	0	530	400	0	0	0	178	463	0	138	1028	206
4	Mountain Ave	Duarte Rd	132	132	65	124	368	96	122	242	81	31	235	169	243	260	98	124	253	64	87	166	29	75	449	228
5	Bateman Ave/Aveni	Buena Vista St/Alpha St	4	108	7	11	8	202	726	266	58	12	7	5	1	256	14	11	15	660	360	121	12	77	22	4
6	Avenida Barbosa	Arrow Hwy	140	0	173	689	1711	0	0	0	0	0	309	319	411	0	578	229	449	0	0	0	0	0	665	262
7	I-605 SB On-ramp	Live Oak Ave	0	0	0	0	1353	541	0	0	0	412	288	0	0	0	0	939	556	0	0	0	1120	1073	0	
8	I-605 NB Off-ramp	Live Oak Ave	581	0	0	0	1250	0	615	0	0	0	321	0	484	0	0	0	964	0	518	0	0	0	1146	0
9	I-605 SB Off-ramp	Arrow Hwy	570	0	380	0	1766	0	0	0	0	504	0	0	241	0	236	0	435	0	0	0	0	0	1272	0
10	Buena Vista St	Huntington Dr	78	222	38	106	1437	94	110	245	165	146	252	52	80	230	137	62	499	158	120	267	203	212	1072	104
11	Buena Vista St	Central Ave	22	446	40	278	135	444	291	280	38	43	22	0	33	531	87	246	121	262	207	357	45	142	88	5
12	Buena Vista St	I-210 WB On-ramp	223	707	0	0	0	0	609	85	0	0	0	0	235	701	0	0	0	0	0	609	360	0	0	0
13	Buena Vista St	Evergreen St/I-210 EB On-ramp	0	503	216	0	0	0	198	388	0	406	12	294	0	454	228	0	0	0	428	716	0	97	372	259
14	Buena Vista St	3 Ranch Rd	15	868	6	39	1	13	52	536	9	12	1	3	19	436	25	38	1	13	22	1108	13	15	4	0
15	Buena Vista St	Duarte Rd	103	281	529	141	301	125	186	282	152	43	353	179	99	272	143	537	289	186	106	452	87	99	393	202
16	Buena Vista St	Village Rd	0	199	169	26	0	25	305	445	0	0	0	0	0	476	24	215	0	201	27	399	0	0	0	0
17	I-210 WB Off-ramp	Central Ave	6	0	0	4	494	0	82	0	359	0	346	6	21	0	2	4	303	0	106	0	314	0	360	11
18	Cinco Robles Dr	Duarte Rd	0	0	0	0	513	4	10	0	18	8	995	46	0	0	0	0	952	13	4	0	13	11	562	50
19	Village Rd	Duarte Rd	0	0	0	0	449	133	10	0	73	336	671	0	0	0	0	0	605	18	123	0	340	82	482	0
20	Duncannon Ave	Evergreen St	4	22	67	19	4	75	18	15	5	3	15	7	34	14	21	30	17	3	1	11	6	1	21	31
21	Hope Dr	Duarte Rd	0	0	0	0	521	66	18	0	56	239	433	0	0	0	0	0	393	15	35	0	234	64	545	0
22	Circle Rd/Employe	Duarte Rd	0	0	0	0	576	213	16	0	9	116	337	1	0	0	0	0	283	24	155	0	117	13	573	6
23	Highland Ave	Huntington Dr	39	180	57	68	1556	440	169	92	80	58	263	28	51	109	75	38	490	117	250	94	77	143	1069	32
24	Highland Ave	Central Ave	104	487	73	64	286	343	125	151	86	86	96	51	61	183	157	22	94	70	455	364	48	40	294	67
25	Highland Ave	Evergreen St	32	834	86	15	1	1	6	300	7	32	4	38	16	258	18	93	3	4	8	755	4	10	0	19
26	Highland Ave	Business Center Dr	20	791	40	13	0	12	34	289	6	4	0	13	5	248	17	23	0	38	24	713	13	10	1	20
27	I-605/Mt Olive Dr	Huntington Dr	91	286	54	123	1182	384	282	136	911	256	234	58	49	286	78	36	403	262	674	188	257	655	797	45

**TABLE C-4
FUTURE BASE
INTERSECTION TURNING MOVEMENT VOLUMES**

Int #	N/S Street	E/W Street	AM PEAK HOUR									PM PEAK HOUR														
			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
1	Live Oak Ave	Arrow Hwy	0	0	0	0	2010	256	248	0	1238	702	583	0	0	0	0	731	449	319	0	909	2341	1050	0	
2	Mountain Ave	Central Ave	154	539	0	397	739	254	0	517	199	0	0	0	226	819	0	327	245	209	0	538	202	0	0	
3	Mountain Ave	Evergreen Ave	0	457	329	0	0	0	157	404	0	202	310	296	0	588	447	0	0	0	197	512	0	152	1191	228
4	Mountain Ave	Duarte Rd	146	146	75	139	449	111	158	267	89	34	304	187	268	287	112	139	328	89	102	183	32	83	565	252
5	Bateman Ave/Aveni	Buena Vista St/Alpha St	4	119	8	13	9	328	839	294	64	13	8	6	1	283	17	13	17	768	559	134	13	85	33	4
6	Avenida Barbosa	Arrow Hwy	174	0	277	822	2118	0	0	0	0	0	503	329	427	0	705	349	821	0	0	0	0	0	1083	354
7	I-605 SB On-ramp	Live Oak Ave	0	0	0	0	1616	683	0	0	0	508	331	0	0	0	0	1285	716	0	0	0	1440	1229	0	
8	I-605 NB Off-ramp	Live Oak Ave	729	0	0	0	1500	0	775	0	0	0	368	0	748	0	0	0	1201	0	675	0	0	0	1310	0
9	I-605 SB Off-ramp	Arrow Hwy	852	0	592	0	2018	0	0	0	0	0	803	0	482	0	446	0	597	0	0	0	0	0	1754	0
10	Buena Vista St	Huntington Dr	87	259	72	133	1681	163	132	280	155	130	345	59	92	295	180	104	662	289	306	344	205	236	1349	122
11	Buena Vista St	Central Ave	24	524	42	320	149	423	325	349	42	48	24	0	36	729	96	335	134	306	242	539	50	157	97	6
12	Buena Vista St	I-210 WB On-ramp	288	701	0	0	0	0	0	715	155	0	0	0	354	839	0	0	0	0	0	831	391	0	0	0
13	Buena Vista St	Evergreen St/I-210 EB On-ramp	0	452	264	0	0	0	282	501	0	459	13	356	0	523	296	0	0	0	502	825	0	181	411	403
14	Buena Vista St	3 Ranch Rd	19	861	9	45	1	14	57	724	10	13	1	5	25	570	32	46	1	14	24	1278	14	17	4	4
15	Buena Vista St	Duarte Rd	122	232	558	288	378	142	199	306	168	39	467	203	124	303	228	661	379	181	153	473	84	112	501	237
16	Buena Vista St	Village Rd	0	233	82	12	0	21	294	469	0	0	0	0	0	500	11	147	0	183	23	516	6	0	0	0
17	I-210 WB Off-ramp	Central Ave	7	0	0	4	555	0	202	0	329	0	389	7	23	0	2	4	347	0	203	0	396	0	429	12
18	Cinco Robles Dr	Duarte Rd	0	0	0	0	746	4	11	0	20	9	1142	51	0	0	0	0	1154	14	4	0	14	12	794	55
19	Village Rd	Duarte Rd	0	0	0	0	701	107	7	0	55	225	930	0	0	0	0	0	909	13	109	0	236	70	726	0
20	Duncannon Ave	Evergreen St	4	24	87	21	4	83	20	17	6	3	17	8	38	15	74	33	19	3	1	12	7	1	23	34
21	Hope Dr	Duarte Rd	0	0	0	0	552	49	17	0	46	174	526	0	0	0	0	0	446	12	22	0	174	58	642	0
22	Circle Rd/Employee	Duarte Rd	0	0	0	0	593	226	17	0	6	94	451	1	0	0	0	0	354	25	165	0	97	9	661	7
23	Highland Ave	Huntington Dr	44	285	64	75	1792	543	220	123	127	123	366	31	56	179	83	43	829	185	316	159	150	206	1362	36
24	Highland Ave	Central Ave	124	732	84	73	316	407	145	250	100	190	105	62	79	348	176	30	104	103	518	547	71	72	325	94
25	Highland Ave	Evergreen St	35	1238	96	17	1	1	7	427	8	48	4	42	18	485	21	103	3	4	9	1009	4	62	0	21
26	Highland Ave	Business Center Dr	424	801	45	14	0	13	38	310	245	189	0	116	268	262	20	25	0	44	27	738	182	301	1	245
27	I-605/Mt Olive Dr	Huntington Dr	102	333	60	136	1372	424	312	155	1074	357	311	66	60	323	86	40	610	289	745	224	480	853	974	53

**TABLE C-5
FUTURE PLUS PROJECT
INTERSECTION TURNING MOVEMENT VOLUMES**

Int #	N/S Street	E/W Street	AM PEAK HOUR												PM PEAK HOUR											
			SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL	SBR	SBT	SBL	WBR	WBT	WBL	NBR	NBT	NBL	EBR	EBT	EBL
1	Live Oak Ave	Arrow Hwy	0	0	0	0	2011	268	322	0	1238	702	592	0	0	0	0	739	515	331	0	909	2341	1051	0	
2	Mountain Ave	Central Ave	154	557	0	397	739	254	0	520	199	0	0	0	226	822	0	327	245	209	0	554	202	0	0	
3	Mountain Ave	Evergreen Ave	0	475	329	0	0	0	157	407	0	202	310	296	0	591	447	0	0	0	197	528	0	152	1191	228
4	Mountain Ave	Duarte Rd	146	146	93	142	453	111	158	267	89	34	326	187	268	287	115	155	348	89	102	183	32	83	569	252
5	Bateman Ave/Aveni	Buena Vista St/Alpha St	4	119	8	13	9	346	954	294	64	13	8	6	1	283	17	13	17	870	578	134	13	85	33	4
6	Avenida Barbosa	Arrow Hwy	187	0	282	853	2118	0	0	0	0	0	503	412	501	0	733	354	821	0	0	0	0	0	1083	368
7	I-605 SB On-ramp	Live Oak Ave	0	0	0	0	1690	683	0	0	0	520	331	0	0	0	0	1297	716	0	0	0	0	1506	1229	0
8	I-605 NB Off-ramp	Live Oak Ave	803	0	0	0	1500	0	775	0	0	0	368	0	760	0	0	0	1201	0	675	0	0	0	1310	0
9	I-605 SB Off-ramp	Arrow Hwy	852	0	592	0	2049	0	0	0	0	0	808	0	482	0	446	0	602	0	0	0	0	0	1782	0
10	Buena Vista St	Huntington Dr	87	265	72	133	1681	175	133	281	159	152	345	59	92	296	180	104	662	291	311	349	225	240	1349	122
11	Buena Vista St	Central Ave	24	564	42	320	149	497	325	354	42	48	24	0	36	736	96	335	134	318	242	569	50	157	97	6
12	Buena Vista St	I-210 WB On-ramp	288	816	0	0	0	0	0	720	173	0	0	0	354	858	0	0	0	0	0	861	491	0	0	0
13	Buena Vista St	Evergreen St/I-210 EB On-ramp	0	567	264	0	0	0	297	524	0	571	13	356	0	542	296	0	0	0	588	955	0	200	411	403
14	Buena Vista St	3 Ranch Rd	19	1088	9	45	1	14	57	762	10	13	1	5	25	607	32	46	1	14	24	1495	14	17	4	4
15	Buena Vista St	Duarte Rd	122	314	702	313	382	155	275	319	170	51	495	203	124	316	252	804	404	249	167	546	95	114	506	237
16	Buena Vista St	Village Rd	0	245	178	27	0	27	333	544	0	0	0	0	0	567	27	232	0	218	29	528	6	0	0	0
17	I-210 WB Off-ramp	Central Ave	7	0	0	4	555	0	218	0	403	0	389	7	23	0	2	4	347	0	206	0	408	0	429	12
18	Cinco Robles Dr	Duarte Rd	0	0	0	0	789	4	11	0	20	9	1390	51	0	0	0	0	1390	14	4	0	14	12	836	55
19	Village Rd	Duarte Rd	0	0	0	0	721	143	11	0	78	359	1044	0	0	0	0	0	1018	19	133	0	364	92	746	0
20	Duncannon Ave	Evergreen St	4	24	87	21	4	83	20	17	6	3	17	8	38	15	74	33	19	3	1	12	7	1	23	34
21	Hope Dr	Duarte Rd	0	0	0	0	593	71	20	0	60	257	561	0	0	0	0	0	482	16	37	0	253	72	672	0
22	Circle Rd/Employe	Duarte Rd	0	0	0	0	652	234	18	0	10	125	458	1	0	0	0	0	364	26	171	0	126	14	702	7
23	Highland Ave	Huntington Dr	44	288	64	75	1804	587	227	123	127	123	367	31	56	180	83	43	831	192	355	162	150	206	1367	36
24	Highland Ave	Central Ave	124	779	84	73	316	411	146	257	100	206	105	62	79	356	176	30	104	104	522	589	71	75	325	94
25	Highland Ave	Evergreen St	35	1305	96	17	1	1	7	435	8	48	4	42	18	496	21	103	3	4	9	1055	4	62	0	21
26	Highland Ave	Business Center Dr	424	868	45	14	0	13	38	318	245	189	0	116	268	273	20	25	0	44	27	784	182	301	1	245
27	I-605/Mt Olive Dr	Huntington Dr	102	333	60	136	1390	424	312	155	1112	362	314	66	60	323	86	40	613	289	745	224	486	881	990	53

APPENDIX D: INTERSECTION LOS ANALYSIS



Existing

ICU

Project Title: Duarte City of Hope
Intersection: 1 - Live Oak Ave & Arrow Hwy
Description: Existing

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

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

OLA Movements :
 FF Movements: NBR, EBR,

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): 0.385 *
	LT	0.00	0	0	0.000	E-W(1): 0.156
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.538 *
	TH	2.00	1,721	3,200	0.538 *	V/C: 0.923
	LT	2.00	94	2,880	0.033	Lost Time: 0.100
Northbound	RT	1.00	149	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	1,109	2,880	0.385 *	ICU: 1.023
Eastbound	RT	1.00	605	1,600	0.000	
	TH	2.00	395	3,200	0.123	
	LT	0.00	0	0	0.000 *	LOS: F

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): 0.000
	TH	0.00	0	0	0.000 *	N-S(2): 0.272 *
	LT	0.00	0	0	0.000	E-W(1): 0.346 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.167
	TH	2.00	534	3,200	0.167	V/C: 0.618
	LT	2.00	262	2,880	0.091 *	Lost Time: 0.100
Northbound	RT	1.00	105	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	783	2,880	0.272 *	ICU: 0.718
Eastbound	RT	1.00	2,088	1,600	0.000	
	TH	2.00	815	3,200	0.255 *	
	LT	0.00	0	0	0.000	LOS: C

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 2 - Mountain Ave & Central Ave
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	139	0	0.000	N-S(1): 0.145 N-S(2): 0.301 * E-W(1): 0.144 E-W(2): 0.321 *
	TH	2.00	463	3,200	0.188 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	359	0	0.000	V/C: 0.622 Lost Time: 0.100 ITS: 0.000
	TH	2.00	669	3,200	0.321 *	
	LT	1.00	230	1,600	0.144	
Northbound	RT	0.00	0	0	0.000	ICU: 0.722
	TH	2.00	463	3,200	0.145	
	LT	1.00	180	1,600	0.113 *	
Eastbound	RT	0.00	0	0	0.000	LOS: C
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	205	0	0.000	N-S(1): 0.147 N-S(2): 0.407 * E-W(1): 0.118 E-W(2): 0.185 *
	TH	2.00	731	3,200	0.293 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	296	1,600	0.185 *	V/C: 0.592 Lost Time: 0.100 ITS: 0.000
	TH	2.00	222	1,600	0.139	
	LT	1.00	189	1,600	0.118	
Northbound	RT	0.00	0	0	0.000	ICU: 0.692
	TH	2.00	471	3,200	0.147	
	LT	1.00	183	1,600	0.114 *	
Eastbound	RT	0.00	0	0	0.000	LOS: B
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 3 - Mountain Ave & Evergreen Ave
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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): 0.341 * N-S(2): 0.123 E-W(1): 0.114 E-W(2): 0.168 *
	TH	2.00	393	3,200	0.123	
	LT	1.00	294	1,600	0.184 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.509 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Northbound	RT	0.00	142	0	0.000	ICU: 0.609
	TH	2.00	361	3,200	0.157 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	1.00	183	1,600	0.114	LOS: B
	TH	2.00	269	3,200	0.084	
	LT	1.00	268	1,600	0.168 *	

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): 0.445 * N-S(2): 0.165 E-W(1): 0.321 * E-W(2): 0.129
	TH	2.00	527	3,200	0.165	
	LT	1.00	400	1,600	0.250 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.766 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	
Northbound	RT	0.00	178	0	0.000	ICU: 0.866
	TH	2.00	447	3,200	0.195 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	1.00	138	1,600	0.086	LOS: D
	TH	2.00	1,028	3,200	0.321 *	
	LT	1.00	206	1,600	0.129	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 4 - Mountain Ave & Duarte Rd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 10 %
 ITS: 0 %
 OLA Movements : SBR, WBR
 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	132	1,600	0.000	N-S(1):	0.180 *
	TH	1.00	132	1,600	0.083	N-S(2):	0.134
	LT	1.00	47	1,600	0.029 *	E-W(1):	0.136
Westbound	RT	1.00	121	1,600	0.046	E-W(2):	0.220 *
	TH	2.00	364	3,200	0.114 *	V/C:	0.400
	LT	1.00	96	1,600	0.060	Lost Time:	0.100
Northbound	RT	1.00	122	1,600	0.076	ITS:	0.000
	TH	1.00	242	1,600	0.151 *	ICU:	0.500
	LT	1.00	81	1,600	0.051	LOS:	A
Eastbound	RT	0.00	31	0	0.000		
	TH	2.00	213	3,200	0.076		
	LT	1.00	169	1,600	0.106 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	243	1,600	0.009	N-S(1):	0.163
	TH	1.00	260	1,600	0.163 *	N-S(2):	0.181 *
	LT	1.00	95	1,600	0.059	E-W(1):	0.203
Westbound	RT	1.00	108	1,600	0.008	E-W(2):	0.216 *
	TH	2.00	233	3,200	0.073 *	V/C:	0.397
	LT	1.00	64	1,600	0.040	Lost Time:	0.100
Northbound	RT	1.00	87	1,600	0.054	ITS:	0.000
	TH	1.00	166	1,600	0.104	ICU:	0.497
	LT	1.00	29	1,600	0.018 *	LOS:	A
Eastbound	RT	0.00	75	0	0.000		
	TH	2.00	445	3,200	0.163		
	LT	1.00	228	1,600	0.143 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 5 - Bateman Ave/Avenida Barbosa & Buena Vista St/Alpha St
Description: Existing

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 :	NBR,		
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	4	0	0.000	N-S(1): 0.240 *
	TH	2.00	108	1,600	0.037 *	N-S(2): 0.000
	LT	0.00	7	1,600	0.004	E-W(1): 0.066 *
Westbound	RT	0.00	11	0	0.000	E-W(2): 0.015
	TH	1.00	8	1,600	0.012	V/C: 0.306
	LT	2.00	184	2,880	0.064 *	Lost Time: 0.100
Northbound	RT	2.00	611	3,200	0.127	ITS: 0.000
	TH	1.00	266	1,600	0.203 *	
	LT	0.00	58	1,600	0.036	
Eastbound	RT	1.00	12	1,600	0.000	ICU: 0.406
	TH	2.00	7	3,200	0.002 *	
	LT	1.00	5	1,600	0.003	LOS: A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	1	0	0.000	N-S(1): 0.168 *
	TH	2.00	256	1,600	0.085 *	N-S(2): 0.000
	LT	0.00	14	1,600	0.009	E-W(1): 0.238 *
Westbound	RT	0.00	11	0	0.000	E-W(2): 0.019
	TH	1.00	15	1,600	0.016	V/C: 0.406
	LT	2.00	558	2,880	0.194 *	Lost Time: 0.100
Northbound	RT	2.00	341	3,200	0.000	ITS: 0.000
	TH	1.00	121	1,600	0.083 *	
	LT	0.00	12	1,600	0.008	
Eastbound	RT	1.00	77	1,600	0.044 *	ICU: 0.506
	TH	2.00	22	3,200	0.007	
	LT	1.00	4	1,600	0.003	LOS: A

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 6 - Avenida Barbosa & Arrow Hwy
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	0.006	N-S(1):	0.058 *
	TH	0.00	0	0	0.000	N-S(2):	0.006
	LT	2.00	168	2,880	0.058 *	E-W(1):	0.097
Westbound	RT	1.00	658	1,600	0.411	E-W(2):	0.683 *
	TH	2.00	1,711	3,200	0.535 *	V/C:	0.741
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.841
	LT	0.00	0	0	0.000	LOS:	D
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	309	3,200	0.097		
	LT	1.00	236	1,600	0.148 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	337	1,600	0.133	N-S(1):	0.191 *
	TH	0.00	0	0	0.000	N-S(2):	0.133
	LT	2.00	550	2,880	0.191 *	E-W(1):	0.208
Westbound	RT	1.00	224	1,600	0.140	E-W(2):	0.295 *
	TH	2.00	449	3,200	0.140 *	V/C:	0.486
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.586
	LT	0.00	0	0	0.000	LOS:	A
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	665	3,200	0.208		
	LT	1.00	248	1,600	0.155 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 7 - I-605 SB On-ramp & Live Oak Ave
Description: Existing

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

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

OLA Movements :
 FF Movements: EBR,

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):	0.000 *
	LT	0.00	0	0	0.000 *	E-W(1):	0.428 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.400
	TH	2.00	1,279	3,200	0.400	V/C:	0.428
	LT	1.00	541	1,600	0.338 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.528
	LT	0.00	0	0	0.000 *	LOS:	A
Eastbound	RT	1.00	400	1,600	0.000		
	TH	2.00	288	3,200	0.090 *		
	LT	0.00	0	0	0.000		

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):	0.000 *
	TH	0.00	0	0	0.000 *	N-S(2):	0.000 *
	LT	0.00	0	0	0.000 *	E-W(1):	0.683 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.290
	TH	2.00	927	3,200	0.290	V/C:	0.683
	LT	1.00	556	1,600	0.348 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.783
	LT	0.00	0	0	0.000 *	LOS:	C
Eastbound	RT	1.00	1,054	1,600	0.000		
	TH	2.00	1,073	3,200	0.335 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 9 - I-605 SB Off-ramp & Arrow Hwy
Description: Existing

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

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

OLA Movements :
 FF Movements: SBR,

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	570	1,600	0.000	N-S(1):	0.238 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	380	1,600	0.238 *	E-W(1):	0.104
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.542 *
	TH	2.00	1,735	3,200	0.542 *	V/C:	0.780
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.880
	LT	0.00	0	0	0.000	LOS:	D
Eastbound	RT	0.00	0	0	0.000		
	TH	3.00	499	4,800	0.104		
	LT	0.00	0	0	0.000 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	241	1,600	0.000	N-S(1):	0.148 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	236	1,600	0.148 *	E-W(1):	0.259 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.134
	TH	2.00	430	3,200	0.134	V/C:	0.407
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.507
	LT	0.00	0	0	0.000	LOS:	A
Eastbound	RT	0.00	0	0	0.000		
	TH	3.00	1,244	4,800	0.259 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 10 - Buena Vista St & Huntington Dr
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	78	0	0.000	N-S(1):	0.134
	TH	2.00	216	3,200	0.092 *	N-S(2):	0.193 *
	LT	1.00	38	1,600	0.024	E-W(1):	0.130
Westbound	RT	1.00	106	1,600	0.054	E-W(2):	0.482 *
	TH	2.00	1,437	3,200	0.449 *	V/C:	0.675
	LT	1.00	82	1,600	0.051	Lost Time:	0.100
Northbound	RT	0.00	109	0	0.000	ITS:	0.000
	TH	2.00	244	3,200	0.110	ICU:	0.775
	LT	1.00	161	1,600	0.101 *	LOS:	C
Eastbound	RT	1.00	124	1,600	0.027		
	TH	2.00	252	3,200	0.079		
	LT	1.00	52	1,600	0.033 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	80	0	0.000	N-S(1):	0.204
	TH	2.00	229	3,200	0.097 *	N-S(2):	0.211 *
	LT	1.00	137	1,600	0.086	E-W(1):	0.433 *
Westbound	RT	1.00	62	1,600	0.000	E-W(2):	0.221
	TH	2.00	499	3,200	0.156	V/C:	0.644
	LT	1.00	156	1,600	0.098 *	Lost Time:	0.100
Northbound	RT	0.00	115	0	0.000	ITS:	0.000
	TH	2.00	262	3,200	0.118	ICU:	0.744
	LT	1.00	183	1,600	0.114 *	LOS:	C
Eastbound	RT	1.00	208	1,600	0.073		
	TH	2.00	1,072	3,200	0.335 *		
	LT	1.00	104	1,600	0.065		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 11 - Buena Vista St & Central Ave
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	22	0	0.000	N-S(1): 0.207 *
	TH	2.00	406	3,200	0.134	N-S(2): 0.158
	LT	1.00	40	1,600	0.025 *	E-W(1): 0.272 *
Westbound	RT	1.00	278	1,600	0.161	E-W(2): 0.161
	TH	1.00	135	1,600	0.084	V/C: 0.479
	LT	1.00	370	1,600	0.231 *	Lost Time: 0.100
Northbound	RT	0.00	291	1,600	0.182 *	ITS: 0.000
	TH	2.00	275	1,600	0.172	ICU: 0.579
	LT	1.00	38	1,600	0.024	LOS: A
Eastbound	RT	0.00	43	0	0.000	
	TH	1.00	22	1,600	0.041 *	
	LT	1.00	0	1,600	0.000	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	33	0	0.000	N-S(1): 0.221 *
	TH	2.00	524	3,200	0.174	N-S(2): 0.202
	LT	1.00	87	1,600	0.054 *	E-W(1): 0.300 *
Westbound	RT	1.00	246	1,600	0.127	E-W(2): 0.130
	TH	1.00	121	1,600	0.076	V/C: 0.521
	LT	1.00	250	1,600	0.156 *	Lost Time: 0.100
Northbound	RT	0.00	207	0	0.000	ITS: 0.000
	TH	2.00	327	3,200	0.167 *	ICU: 0.621
	LT	1.00	45	1,600	0.028	LOS: B
Eastbound	RT	0.00	142	0	0.000	
	TH	1.00	88	1,600	0.144 *	
	LT	1.00	5	1,600	0.003	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 12 - Buena Vista St & I-210 WB On-ramp
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	223	0	0.000	N-S(1): 0.189
	TH	2.00	592	3,200	0.255 *	N-S(2): 0.297 *
	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 *	V/C: 0.297
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	604	3,200	0.189	ICU: 0.397
	LT	1.00	67	1,600	0.042 *	LOS: A
Eastbound	RT	0.00	0	0	0.000	
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	235	0	0.000	N-S(1): 0.181
	TH	2.00	682	3,200	0.287 *	N-S(2): 0.450 *
	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 *	V/C: 0.450
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	579	3,200	0.181	ICU: 0.550
	LT	1.00	260	1,600	0.163 *	LOS: A
Eastbound	RT	0.00	0	0	0.000	
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 13 - 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): 0.249 *
	TH	2.00	388	3,200	0.121	N-S(2): 0.121
	LT	1.00	216	1,600	0.135 *	E-W(1): 0.188 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.184
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	V/C: 0.437
Northbound	RT	1.00	183	1,600	0.114	Lost Time: 0.100
	TH	2.00	365	3,200	0.114 *	ITS: 0.000
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	294	0	0.000	ICU: 0.537
	TH	2.00	12	1,600	0.188 *	
	LT	0.00	294	1,600	0.184	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): 0.357 *
	TH	2.00	435	3,200	0.136	N-S(2): 0.136
	LT	1.00	228	1,600	0.143 *	E-W(1): 0.222 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.162
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	V/C: 0.579
Northbound	RT	1.00	342	1,600	0.214 *	Lost Time: 0.100
	TH	2.00	586	3,200	0.183	ITS: 0.000
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	78	0	0.000	ICU: 0.679
	TH	2.00	372	1,600	0.222 *	
	LT	0.00	259	1,600	0.162	LOS: B

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 15 - Buena Vista St & Duarte Rd
Description: Existing

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

N-S Split Phase : Y
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	103	0	0.000	N-S(1):	0.359 *
	TH	2.00	199	1,600	0.189	N-S(2):	0.000
	LT	0.00	385	1,600	0.241 *	E-W(1):	0.172
Westbound	RT	1.00	116	1,600	0.000	E-W(2):	0.205 *
	TH	2.00	297	3,200	0.093 *	V/C:	0.564
	LT	1.00	112	1,600	0.070	Lost Time:	0.100
Northbound	RT	0.00	110	0	0.000	ITS:	0.000
	TH	2.00	269	3,200	0.118 *	ICU:	0.664
	LT	1.00	150	1,600	0.094	LOS:	B
Eastbound	RT	1.00	31	1,600	0.000		
	TH	2.00	325	3,200	0.102		
	LT	1.00	179	1,600	0.112 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	99	0	0.000	N-S(1):	0.296 *
	TH	2.00	259	1,600	0.149 *	N-S(2):	0.000
	LT	0.00	119	1,600	0.074	E-W(1):	0.195
Westbound	RT	1.00	394	1,600	0.209 *	E-W(2):	0.335 *
	TH	2.00	264	3,200	0.083	V/C:	0.631
	LT	1.00	118	1,600	0.074	Lost Time:	0.100
Northbound	RT	0.00	92	0	0.000	ITS:	0.000
	TH	2.00	379	3,200	0.147 *	ICU:	0.731
	LT	1.00	76	1,600	0.048	LOS:	C
Eastbound	RT	1.00	97	1,600	0.037		
	TH	2.00	388	3,200	0.121		
	LT	1.00	202	1,600	0.126 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 21 - Hope Dr & Duarte Rd
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.026 *
	LT	0.00	0	0	0.000	E-W(1):	0.201 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.150
	TH	2.00	480	3,200	0.150	V/C:	0.227
	LT	1.00	44	1,600	0.028 *	Lost Time:	0.100
Northbound	RT	1.00	15	1,600	0.000	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.327
	LT	1.00	42	1,600	0.026 *	LOS:	A
Eastbound	RT	0.00	156	0	0.000		
	TH	2.00	398	3,200	0.173 *		
	LT	0.00	0	0	0.000		

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):	0.009
	TH	0.00	0	0	0.000 *	N-S(2):	0.097 *
	LT	0.00	0	0	0.000	E-W(1):	0.184 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.112
	TH	2.00	357	3,200	0.112	V/C:	0.281
	LT	1.00	11	1,600	0.007 *	Lost Time:	0.100
Northbound	RT	1.00	20	1,600	0.009	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.381
	LT	1.00	155	1,600	0.097 *	LOS:	A
Eastbound	RT	0.00	50	0	0.000		
	TH	2.00	515	3,200	0.177 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 23 - Highland Ave & Huntington Dr
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	39	1,600	0.016	N-S(1):	0.088
	TH	2.00	177	3,200	0.043 *	N-S(2):	0.093 *
	LT	0.00	57	1,600	0.036	E-W(1):	0.330
Westbound	RT	1.00	68	1,600	0.025	E-W(2):	0.501 *
	TH	2.00	1,544	3,200	0.483 *	V/C:	0.594
	LT	1.00	396	1,600	0.248	Lost Time:	0.100
Northbound	RT	1.00	162	1,600	0.000	ITS:	0.000
	TH	2.00	92	3,200	0.052	ICU:	0.694
	LT	0.00	80	1,600	0.050 *	LOS:	B
Eastbound	RT	1.00	58	1,600	0.011		
	TH	2.00	262	3,200	0.082		
	LT	1.00	28	1,600	0.018 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	51	1,600	0.022	N-S(1):	0.145 *
	TH	2.00	108	3,200	0.037	N-S(2):	0.085
	LT	0.00	75	1,600	0.047 *	E-W(1):	0.402 *
Westbound	RT	1.00	38	1,600	0.000	E-W(2):	0.173
	TH	2.00	488	3,200	0.153	V/C:	0.547
	LT	1.00	110	1,600	0.069 *	Lost Time:	0.100
Northbound	RT	1.00	211	1,600	0.098 *	ITS:	0.000
	TH	2.00	91	3,200	0.053	ICU:	0.647
	LT	0.00	77	1,600	0.048	LOS:	B
Eastbound	RT	1.00	143	1,600	0.065		
	TH	2.00	1,064	3,200	0.333 *		
	LT	1.00	32	1,600	0.020		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 24 - Highland Ave & Central Ave
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	104	1,600	0.049	N-S(1):	0.101
	TH	2.00	440	3,200	0.096 *	N-S(2):	0.150 *
	LT	0.00	73	1,600	0.046	E-W(1):	0.304
Westbound	RT	0.00	64	0	0.000	E-W(2):	0.463 *
	TH	1.00	286	1,600	0.431 *	V/C:	0.613
	LT	0.00	339	1,600	0.212	Lost Time:	0.100
Northbound	RT	1.00	124	1,600	0.000	ITS:	0.000
	TH	2.00	144	3,200	0.055	ICU:	0.713
	LT	0.00	86	1,600	0.054 *	LOS:	C
Eastbound	RT	1.00	70	1,600	0.017		
	TH	1.00	96	1,600	0.092		
	LT	0.00	51	1,600	0.032 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	61	1,600	0.017	N-S(1):	0.358 *
	TH	2.00	175	3,200	0.061	N-S(2):	0.091
	LT	0.00	157	1,600	0.098 *	E-W(1):	0.292 *
Westbound	RT	0.00	22	0	0.000	E-W(2):	0.158
	TH	1.00	94	1,600	0.116	V/C:	0.650
	LT	0.00	69	1,600	0.043 *	Lost Time:	0.100
Northbound	RT	1.00	451	1,600	0.260 *	ITS:	0.000
	TH	2.00	322	3,200	0.116	ICU:	0.750
	LT	0.00	48	1,600	0.030	LOS:	C
Eastbound	RT	0.00	37	0	0.000		
	TH	1.00	294	1,600	0.249 *		
	LT	0.00	67	1,600	0.042		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 26 - Highland Ave & Business Center Dr
Description: Existing

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

N-S Split Phase : N
 E-W Split Phase : Y
 Lost Time (% of cycle) : 10
 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	20	0	0.000	N-S(1):	0.123
	TH	2.00	724	3,200	0.233 *	N-S(2):	0.237 *
	LT	1.00	40	1,600	0.025	E-W(1):	0.016 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.008	V/C:	0.253
	LT	1.00	12	1,600	0.008 *	Lost Time:	0.100
Northbound	RT	0.00	34	0	0.000	ITS:	0.000
	TH	2.00	281	3,200	0.098	ICU:	0.353
	LT	1.00	6	1,600	0.004 *	LOS:	A
Eastbound	RT	0.00	4	0	0.000		
	TH	1.00	0	1,600	0.003		
	LT	1.00	13	1,600	0.008 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.227 *
	TH	2.00	237	3,200	0.076	N-S(2):	0.084
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.037 *
Westbound	RT	0.00	23	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.014	V/C:	0.264
	LT	1.00	38	1,600	0.024 *	Lost Time:	0.100
Northbound	RT	0.00	24	0	0.000	ITS:	0.000
	TH	2.00	667	3,200	0.216 *	ICU:	0.364
	LT	1.00	13	1,600	0.008	LOS:	A
Eastbound	RT	0.00	10	0	0.000		
	TH	1.00	1	1,600	0.007		
	LT	1.00	20	1,600	0.013 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 27 - I-605/Mt Olive Dr & Huntington Dr
Description: Existing

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

N-S Split Phase : Y
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	91	0	0.000	N-S(1):	0.468 *
	TH	2.00	286	3,200	0.118 *	N-S(2):	0.000
	LT	1.00	54	1,600	0.034	E-W(1):	0.312
Westbound	RT	1.00	123	1,600	0.060	E-W(2):	0.400 *
	TH	2.00	1,164	3,200	0.364 *	V/C:	0.868
	LT	1.00	384	1,600	0.240	Lost Time:	0.100
Northbound	RT	1.00	282	1,600	0.056	ITS:	0.000
	TH	0.27	136	431	0.315	ICU:	0.968
	LT	1.73	873	2,492	0.350 *	LOS:	E
Eastbound	RT	1.00	251	1,600	0.000		
	TH	2.00	231	3,200	0.072		
	LT	1.00	58	1,600	0.036 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	49	0	0.000	N-S(1):	0.444 *
	TH	2.00	286	3,200	0.105 *	N-S(2):	0.000
	LT	1.00	78	1,600	0.049	E-W(1):	0.480 *
Westbound	RT	1.00	36	1,600	0.000	E-W(2):	0.153
	TH	2.00	400	3,200	0.125	V/C:	0.924
	LT	1.00	262	1,600	0.164 *	Lost Time:	0.100
Northbound	RT	1.00	674	1,600	0.339 *	ITS:	0.000
	TH	0.86	188	1,370	0.137	ICU:	1.024
	LT	1.14	251	1,647	0.152	LOS:	F
Eastbound	RT	1.00	627	1,600	0.316 *		
	TH	2.00	781	3,200	0.244		
	LT	1.00	45	1,600	0.028		

* - Denotes critical movement

HCM

Intersection												
Int Delay, s/veh	42.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1146	0	0	964	0	0	0	518	0	0	472
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1246	0	0	1048	0	0	0	563	0	0	513

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1048	0	0	1246	0	0	1770	2294	623	1671	2294	524
Stage 1	-	-	-	-	-	-	1246	1246	-	1048	1048	-
Stage 2	-	-	-	-	-	-	524	1048	-	623	1246	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	660	-	-	554	-	-	53	39 ~ 429		63	39 ~ 498	
Stage 1	-	-	-	-	-	-	184	244	-	244	303	-
Stage 2	-	-	-	-	-	-	504	303	-	440	244	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	660	-	-	554	-	-	-	39 ~ 429		-	39 ~ 498	
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	39	-	-	39	-
Stage 1	-	-	-	-	-	-	184	244	-	244	303	-
Stage 2	-	-	-	-	-	-	-	303	-	-	244	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	183.2	77.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	660	-	-	554	-	-	498
HCM Lane V/C Ratio	1.312	-	-	-	-	-	-	1.03
HCM Control Delay (s)	183.2	0	-	-	0	-	-	77.3
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	25.2	0	-	-	0	-	-	14.8

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

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	4	15	13	1	38	13	891	22	25	399	19
Conflicting Peds, #/hr	0	0	1	0	0	1	4	0	5	5	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	0	4	16	14	1	41	14	968	24	27	434	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1013	1521	233	1284	1520	502	455	0	0	993	0	0
Stage 1	499	499	-	1010	1010	-	-	-	-	-	-	-
Stage 2	514	1022	-	274	510	-	-	-	-	-	-	-
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	193	117	769	122	118	515	1102	-	-	692	-	-
Stage 1	522	542	-	257	316	-	-	-	-	-	-	-
Stage 2	511	312	-	709	536	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	164	107	765	108	108	512	1097	-	-	689	-	-
Mov Cap-2 Maneuver	164	107	-	108	108	-	-	-	-	-	-	-
Stage 1	506	513	-	249	307	-	-	-	-	-	-	-
Stage 2	453	303	-	649	507	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.5	23.1	0.2	0.8
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	333	255	689	-	-
HCM Lane V/C Ratio	0.013	-	-	0.062	0.222	0.039	-	-
HCM Control Delay (s)	8.3	0.1	-	16.5	23.1	10.4	0.2	-
HCM Lane LOS	A	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.8	0.1	-	-

Intersection

Int Delay, s/veh 4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	166	130	387	21	8	409
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	230	-
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	180	141	421	23	9	445

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	672	222	0 0 443 0
Stage 1	432	-	- - - -
Stage 2	240	-	- - - -
Critical Hdwy	6.84	6.94	- - 4.14 -
Critical Hdwy Stg 1	5.84	-	- - - -
Critical Hdwy Stg 2	5.84	-	- - - -
Follow-up Hdwy	3.52	3.32	- - 2.22 -
Pot Cap-1 Maneuver	389	782	- - 1113 -
Stage 1	622	-	- - - -
Stage 2	777	-	- - - -
Platoon blocked, %			- - - -
Mov Cap-1 Maneuver	386	782	- - 1113 -
Mov Cap-2 Maneuver	386	-	- - - -
Stage 1	622	-	- - - -
Stage 2	771	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	17.2	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	386	782	1113	-
HCM Lane V/C Ratio	-	-	0.467	0.181	0.008	-
HCM Control Delay (s)	-	-	22.3	10.6	8.3	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	2.4	0.7	0	-

Intersection												
Int Delay, s/veh	30.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	360	0	0	303	4	302	0	103	2	0	21
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									
Storage Length	-	-	-	-	-	-	0	-	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	12	391	0	0	329	4	328	0	112	2	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	334	0	0	391	0	0	758	749	391	747	747	332
Stage 1	-	-	-	-	-	-	415	415	-	332	332	-
Stage 2	-	-	-	-	-	-	343	334	-	415	415	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1225	-	-	1168	-	-	~ 324	341	658	329	341	710
Stage 1	-	-	-	-	-	-	615	592	-	681	644	-
Stage 2	-	-	-	-	-	-	672	643	-	615	592	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1225	-	-	1168	-	-	~ 310	337	658	270	337	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 310	337	-	270	337	-
Stage 1	-	-	-	-	-	-	607	584	-	672	644	-
Stage 2	-	-	-	-	-	-	650	643	-	504	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	81.5	11
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	658	1225	-	-	1168	-	-	622
HCM Lane V/C Ratio	1.059	0.17	0.01	-	-	-	-	-	0.04
HCM Control Delay (s)	105.4	11.6	8	0	-	0	-	-	11
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	12.3	0.6	0	-	-	0	-	-	0.1

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

Intersection

Int Delay, s/veh 0.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	50	520	11	13	716	13	4
Conflicting Peds, #/hr	0	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	0	-	-	113	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	54	565	12	14	778	14	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	568	0	0	577	0	1097	292
Stage 1	-	-	-	-	-	680	-
Stage 2	-	-	-	-	-	417	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	627	-	-	993	-	207	704
Stage 1	-	-	-	-	-	465	-
Stage 2	-	-	-	-	-	633	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	627	-	-	991	-	204	702
Mov Cap-2 Maneuver	-	-	-	-	-	204	-
Stage 1	-	-	-	-	-	465	-
Stage 2	-	-	-	-	-	622	-

Approach	EB	WB	NB
HCM Control Delay, s	1	0.2	20.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	245	627	-	-	991	-
HCM Lane V/C Ratio	0.075	0.087	-	-	0.014	-
HCM Control Delay (s)	20.9	11.3	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.3	-	-	0	-

Intersection	
Int Delay, s/veh	8.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	462	60	12	496	212	99
Conflicting Peds, #/hr	0	2	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	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	502	65	13	539	230	108

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	831
Stage 1	-	-	535
Stage 2	-	-	296
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	1001	308
Stage 1	-	-	551
Stage 2	-	-	729
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1000	303
Mov Cap-2 Maneuver	-	-	303
Stage 1	-	-	551
Stage 2	-	-	718

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	35.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	303	711	-	-	1000	-
HCM Lane V/C Ratio	0.761	0.151	-	-	0.013	-
HCM Control Delay (s)	46.5	11	-	-	8.6	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	5.8	0.5	-	-	0	-

Intersection

Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	21	1	0	3	17	30	0	6	11	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	23	1	0	3	18	33	0	7	12	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.6	7.1	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	58%	6%	30%
Vol Thru, %	61%	40%	34%	20%
Vol Right, %	6%	2%	60%	49%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	53	50	69
LT Vol	6	31	3	21
Through Vol	11	21	17	14
RT Vol	1	1	30	34
Lane Flow Rate	20	58	54	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.068	0.057	0.081
Departure Headway (Hd)	4.219	4.246	3.794	3.906
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	841	839	936	910
Service Time	2.282	2.293	1.848	1.962
HCM Lane V/C Ratio	0.024	0.069	0.058	0.082
HCM Control Delay	7.4	7.6	7.1	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.2	0.3

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	21	14	34
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	15	37
Number of Lanes	0	0	1	0

Approach

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

Lane

Intersection	
Int Delay, s/veh	4.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	6	532	8	23	273	88	149
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	105	-	-	105	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	7	578	9	25	297	96	162

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	217	0	0	587	0	794	293
Stage 1	-	-	-	-	-	596	-
Stage 2	-	-	-	-	-	198	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	1044	-	-	984	-	325	703
Stage 1	-	-	-	-	-	513	-
Stage 2	-	-	-	-	-	816	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	1044	-	-	984	-	317	703
Mov Cap-2 Maneuver	-	-	-	-	-	317	-
Stage 1	-	-	-	-	-	513	-
Stage 2	-	-	-	-	-	795	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.7	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	484	1044	-	-	984	-
HCM Lane V/C Ratio	0.532	0.006	-	-	0.025	-
HCM Control Delay (s)	20.6	8.5	-	-	8.8	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	3.1	0	-	-	0.1	-

Intersection												
Int Delay, s/veh	1.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	10	4	3	93	4	709	8	18	247	16
Conflicting Peds, #/hr	0	0	0	0	0	1	5	0	2	1	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	21	0	11	4	3	101	4	771	9	20	268	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	713	1105	148	958	1110	396	286	0	0	780	0	0
Stage 1	316	316	-	785	785	-	-	-	-	-	-	-
Stage 2	397	789	-	173	325	-	-	-	-	-	-	-
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	319	209	872	212	208	603	1273	-	-	833	-	-
Stage 1	670	654	-	352	402	-	-	-	-	-	-	-
Stage 2	600	400	-	812	648	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	254	202	868	203	201	600	1268	-	-	830	-	-
Mov Cap-2 Maneuver	254	202	-	203	201	-	-	-	-	-	-	-
Stage 1	666	635	-	350	399	-	-	-	-	-	-	-
Stage 2	490	397	-	775	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	13.6	0	0.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1268	-	-	336	527	830	-	-
HCM Lane V/C Ratio	0.003	-	-	0.094	0.206	0.024	-	-
HCM Control Delay (s)	7.8	0	-	16.8	13.6	9.4	0.1	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.8	0.1	-	-

Existing Plus Project

ICU

Project Title: Duarte City of Hope
Intersection: 1 - Live Oak Ave & Arrow Hwy
Description: Existing Plus Project

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

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

OLA Movements :
 FF Movements: NBR, EBR,

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): 0.385 *
	LT	0.00	0	0	0.000	E-W(1): 0.163
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.538 *
	TH	2.00	1,722	3,200	0.538 *	V/C: 0.923
	LT	2.00	106	2,880	0.037	Lost Time: 0.100
Northbound	RT	1.00	223	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	1,109	2,880	0.385 *	
Eastbound	RT	1.00	605	1,600	0.000	ICU: 1.023
	TH	2.00	404	3,200	0.126	
	LT	0.00	0	0	0.000 *	LOS: F

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): 0.000
	TH	0.00	0	0	0.000 *	N-S(2): 0.272 *
	LT	0.00	0	0	0.000	E-W(1): 0.369 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.169
	TH	2.00	542	3,200	0.169	V/C: 0.641
	LT	2.00	328	2,880	0.114 *	Lost Time: 0.100
Northbound	RT	1.00	117	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	783	2,880	0.272 *	
Eastbound	RT	1.00	2,088	1,600	0.000	ICU: 0.741
	TH	2.00	816	3,200	0.255 *	
	LT	0.00	0	0	0.000	LOS: C

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 2 - Mountain Ave & Central Ave
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	139	0	0.000	N-S(1): 0.146 N-S(2): 0.307 * E-W(1): 0.144 E-W(2): 0.321 *
	TH	2.00	481	3,200	0.194 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	359	0	0.000	V/C: 0.628 Lost Time: 0.100 ITS: 0.000
	TH	2.00	669	3,200	0.321 *	
	LT	1.00	230	1,600	0.144	
Northbound	RT	0.00	0	0	0.000	ICU: 0.728
	TH	2.00	466	3,200	0.146	
	LT	1.00	180	1,600	0.113 *	
Eastbound	RT	0.00	0	0	0.000	LOS: C
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	205	0	0.000	N-S(1): 0.152 N-S(2): 0.407 * E-W(1): 0.118 E-W(2): 0.185 *
	TH	2.00	734	3,200	0.293 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	296	1,600	0.185 *	V/C: 0.592 Lost Time: 0.100 ITS: 0.000
	TH	2.00	222	1,600	0.139	
	LT	1.00	189	1,600	0.118	
Northbound	RT	0.00	0	0	0.000	ICU: 0.692
	TH	2.00	487	3,200	0.152	
	LT	1.00	183	1,600	0.114 *	
Eastbound	RT	0.00	0	0	0.000	LOS: B
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 3 - Mountain Ave & Evergreen Ave
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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): 0.342 * N-S(2): 0.128 E-W(1): 0.114 E-W(2): 0.168 *
	TH	2.00	411	3,200	0.128	
	LT	1.00	294	1,600	0.184 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.510 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Northbound	RT	0.00	142	0	0.000	ICU: 0.610
	TH	2.00	364	3,200	0.158 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	1.00	183	1,600	0.114	LOS: B
	TH	2.00	269	3,200	0.084	
	LT	1.00	268	1,600	0.168 *	

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): 0.450 * N-S(2): 0.166 E-W(1): 0.321 * E-W(2): 0.129
	TH	2.00	530	3,200	0.166	
	LT	1.00	400	1,600	0.250 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.771 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	
Northbound	RT	0.00	178	0	0.000	ICU: 0.871
	TH	2.00	463	3,200	0.200 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	1.00	138	1,600	0.086	LOS: D
	TH	2.00	1,028	3,200	0.321 *	
	LT	1.00	206	1,600	0.129	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 4 - Mountain Ave & Duarte Rd
Description: Existing Plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 10 %
 ITS: 0 %
 OLA Movements : SBR, WBR
 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	132	1,600	0.000	N-S(1):	0.192 *
	TH	1.00	132	1,600	0.083	N-S(2):	0.134
	LT	1.00	65	1,600	0.041 *	E-W(1):	0.143
Westbound	RT	1.00	124	1,600	0.037	E-W(2):	0.221 *
	TH	2.00	368	3,200	0.115 *	V/C:	0.413
	LT	1.00	96	1,600	0.060	Lost Time:	0.100
Northbound	RT	1.00	122	1,600	0.076	ITS:	0.000
	TH	1.00	242	1,600	0.151 *	ICU:	0.513
	LT	1.00	81	1,600	0.051	LOS:	A
Eastbound	RT	0.00	31	0	0.000		
	TH	2.00	235	3,200	0.083		
	LT	1.00	169	1,600	0.106 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	243	1,600	0.009	N-S(1):	0.165
	TH	1.00	260	1,600	0.163 *	N-S(2):	0.181 *
	LT	1.00	98	1,600	0.061	E-W(1):	0.204
Westbound	RT	1.00	124	1,600	0.016	E-W(2):	0.222 *
	TH	2.00	253	3,200	0.079 *	V/C:	0.403
	LT	1.00	64	1,600	0.040	Lost Time:	0.100
Northbound	RT	1.00	87	1,600	0.054	ITS:	0.000
	TH	1.00	166	1,600	0.104	ICU:	0.503
	LT	1.00	29	1,600	0.018 *	LOS:	A
Eastbound	RT	0.00	75	0	0.000		
	TH	2.00	449	3,200	0.164		
	LT	1.00	228	1,600	0.143 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 5 - Bateman Ave/Avenida Barbosa & Buena Vista St/Alpha St
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 :	NBR,		
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	4	0	0.000	N-S(1): 0.240 *
	TH	2.00	108	1,600	0.037 *	N-S(2): 0.000
	LT	0.00	7	1,600	0.004	E-W(1): 0.072 *
Westbound	RT	0.00	11	0	0.000	E-W(2): 0.015
	TH	1.00	8	1,600	0.012	V/C: 0.312
	LT	2.00	202	2,880	0.070 *	Lost Time: 0.100
Northbound	RT	2.00	726	3,200	0.157	ITS: 0.000
	TH	1.00	266	1,600	0.203 *	
	LT	0.00	58	1,600	0.036	
Eastbound	RT	1.00	12	1,600	0.000	ICU: 0.412
	TH	2.00	7	3,200	0.002 *	
	LT	1.00	5	1,600	0.003	LOS: A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	1	0	0.000	N-S(1): 0.168 *
	TH	2.00	256	1,600	0.085 *	N-S(2): 0.000
	LT	0.00	14	1,600	0.009	E-W(1): 0.273 *
Westbound	RT	0.00	11	0	0.000	E-W(2): 0.019
	TH	1.00	15	1,600	0.016	V/C: 0.441
	LT	2.00	660	2,880	0.229 *	Lost Time: 0.100
Northbound	RT	2.00	360	3,200	0.000	ITS: 0.000
	TH	1.00	121	1,600	0.083 *	
	LT	0.00	12	1,600	0.008	
Eastbound	RT	1.00	77	1,600	0.044 *	ICU: 0.541
	TH	2.00	22	3,200	0.007	
	LT	1.00	4	1,600	0.003	LOS: A

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 6 - Avenida Barbosa & Arrow Hwy
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	140	1,600	0.000	N-S(1):	0.060 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	173	2,880	0.060 *	E-W(1):	0.097
Westbound	RT	1.00	689	1,600	0.431	E-W(2):	0.734 *
	TH	2.00	1,711	3,200	0.535 *	V/C:	0.794
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.894
	LT	0.00	0	0	0.000	LOS:	D
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	309	3,200	0.097		
	LT	1.00	319	1,600	0.199 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	411	1,600	0.175	N-S(1):	0.201 *
	TH	0.00	0	0	0.000	N-S(2):	0.175
	LT	2.00	578	2,880	0.201 *	E-W(1):	0.208
Westbound	RT	1.00	229	1,600	0.143 *	E-W(2):	0.307 *
	TH	2.00	449	3,200	0.140	V/C:	0.508
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.608
	LT	0.00	0	0	0.000	LOS:	B
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	665	3,200	0.208		
	LT	1.00	262	1,600	0.164 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 7 - I-605 SB On-ramp & Live Oak Ave
Description: Existing Plus Project

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

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

OLA Movements :
 FF Movements: EBR,

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 * N-S(2): 0.000 * E-W(1): 0.428 * E-W(2): 0.423
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.428 Lost Time: 0.100 ITS: 0.000
	TH	2.00	1,353	3,200	0.423	
	LT	1.00	541	1,600	0.338 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.528
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Eastbound	RT	1.00	412	1,600	0.000	LOS: A
	TH	2.00	288	3,200	0.090 *	
	LT	0.00	0	0	0.000	

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): 0.000 * N-S(2): 0.000 * E-W(1): 0.683 * E-W(2): 0.293
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.683 Lost Time: 0.100 ITS: 0.000
	TH	2.00	939	3,200	0.293	
	LT	1.00	556	1,600	0.348 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.783
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Eastbound	RT	1.00	1,120	1,600	0.000	LOS: C
	TH	2.00	1,073	3,200	0.335 *	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 9 - I-605 SB Off-ramp & Arrow Hwy
Description: Existing Plus Project

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

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

OLA Movements :
 FF Movements: SBR,

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	570	1,600	0.000	N-S(1):	0.238 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	380	1,600	0.238 *	E-W(1):	0.105
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.552 *
	TH	2.00	1,766	3,200	0.552 *	V/C:	0.790
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.890
	LT	0.00	0	0	0.000	LOS:	D
Eastbound	RT	0.00	0	0	0.000		
	TH	3.00	504	4,800	0.105		
	LT	0.00	0	0	0.000 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	241	1,600	0.000	N-S(1):	0.148 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	236	1,600	0.148 *	E-W(1):	0.265 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.136
	TH	2.00	435	3,200	0.136	V/C:	0.413
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.513
	LT	0.00	0	0	0.000	LOS:	A
Eastbound	RT	0.00	0	0	0.000		
	TH	3.00	1,272	4,800	0.265 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 10 - Buena Vista St & Huntington Dr
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	78	0	0.000	N-S(1):	0.135
	TH	2.00	222	3,200	0.094 *	N-S(2):	0.197 *
	LT	1.00	38	1,600	0.024	E-W(1):	0.138
Westbound	RT	1.00	106	1,600	0.054	E-W(2):	0.482 *
	TH	2.00	1,437	3,200	0.449 *	V/C:	0.679
	LT	1.00	94	1,600	0.059	Lost Time:	0.100
Northbound	RT	0.00	110	0	0.000	ITS:	0.000
	TH	2.00	245	3,200	0.111	ICU:	0.779
	LT	1.00	165	1,600	0.103 *	LOS:	C
Eastbound	RT	1.00	146	1,600	0.040		
	TH	2.00	252	3,200	0.079		
	LT	1.00	52	1,600	0.033 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	80	0	0.000	N-S(1):	0.207
	TH	2.00	230	3,200	0.097 *	N-S(2):	0.224 *
	LT	1.00	137	1,600	0.086	E-W(1):	0.434 *
Westbound	RT	1.00	62	1,600	0.000	E-W(2):	0.221
	TH	2.00	499	3,200	0.156	V/C:	0.658
	LT	1.00	158	1,600	0.099 *	Lost Time:	0.100
Northbound	RT	0.00	120	0	0.000	ITS:	0.000
	TH	2.00	267	3,200	0.121	ICU:	0.758
	LT	1.00	203	1,600	0.127 *	LOS:	C
Eastbound	RT	1.00	212	1,600	0.069		
	TH	2.00	1,072	3,200	0.335 *		
	LT	1.00	104	1,600	0.065		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 11 - Buena Vista St & Central Ave
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	22	0	0.000	N-S(1): 0.207 *
	TH	2.00	446	3,200	0.146	N-S(2): 0.170
	LT	1.00	40	1,600	0.025 *	E-W(1): 0.319 *
Westbound	RT	1.00	278	1,600	0.161	E-W(2): 0.161
	TH	1.00	135	1,600	0.084	V/C: 0.526
	LT	1.00	444	1,600	0.278 *	Lost Time: 0.100
Northbound	RT	0.00	291	1,600	0.182 *	ITS: 0.000
	TH	2.00	280	1,600	0.175	ICU: 0.626
	LT	1.00	38	1,600	0.024	LOS: B
Eastbound	RT	0.00	43	0	0.000	
	TH	1.00	22	1,600	0.041 *	
	LT	1.00	0	1,600	0.000	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	33	0	0.000	N-S(1): 0.230 *
	TH	2.00	531	3,200	0.176	N-S(2): 0.204
	LT	1.00	87	1,600	0.054 *	E-W(1): 0.308 *
Westbound	RT	1.00	246	1,600	0.127	E-W(2): 0.130
	TH	1.00	121	1,600	0.076	V/C: 0.538
	LT	1.00	262	1,600	0.164 *	Lost Time: 0.100
Northbound	RT	0.00	207	0	0.000	ITS: 0.000
	TH	2.00	357	3,200	0.176 *	ICU: 0.638
	LT	1.00	45	1,600	0.028	LOS: B
Eastbound	RT	0.00	142	0	0.000	
	TH	1.00	88	1,600	0.144 *	
	LT	1.00	5	1,600	0.003	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 12 - Buena Vista St & I-210 WB On-ramp
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	223	0	0.000	N-S(1): 0.190
	TH	2.00	707	3,200	0.291 *	N-S(2): 0.344 *
	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 *	V/C: 0.344
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	609	3,200	0.190	ICU: 0.444
	LT	1.00	85	1,600	0.053 *	LOS: A
Eastbound	RT	0.00	0	0	0.000	
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	235	0	0.000	N-S(1): 0.190
	TH	2.00	701	3,200	0.293 *	N-S(2): 0.518 *
	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 *	V/C: 0.518
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	609	3,200	0.190	ICU: 0.618
	LT	1.00	360	1,600	0.225 *	LOS: B
Eastbound	RT	0.00	0	0	0.000	
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 13 - Buena Vista St & Evergreen St/I-210 EB 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	0	0	0.000	N-S(1): 0.259 *
	TH	2.00	503	3,200	0.157	N-S(2): 0.157
	LT	1.00	216	1,600	0.135 *	E-W(1): 0.254 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.184
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	V/C: 0.513
Northbound	RT	1.00	198	1,600	0.124 *	Lost Time: 0.100
	TH	2.00	388	3,200	0.121	ITS: 0.000
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	406	1,600	0.254 *	ICU: 0.613
	TH	2.00	12	1,600	0.191	
	LT	0.00	294	1,600	0.184	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): 0.411 *
	TH	2.00	454	3,200	0.142	N-S(2): 0.142
	LT	1.00	228	1,600	0.143 *	E-W(1): 0.228 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.162
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	V/C: 0.639
Northbound	RT	1.00	428	1,600	0.268 *	Lost Time: 0.100
	TH	2.00	716	3,200	0.224	ITS: 0.000
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	97	0	0.000	ICU: 0.739
	TH	2.00	372	1,600	0.228 *	
	LT	0.00	259	1,600	0.162	LOS: C

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 15 - Buena Vista St & Duarte Rd
Description: Existing Plus Project

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

N-S Split Phase : Y
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	103	0	0.000	N-S(1): 0.477 *
	TH	2.00	281	1,600	0.240	N-S(2): 0.000
	LT	0.00	529	1,600	0.331 *	E-W(1): 0.188
Westbound	RT	1.00	141	1,600	0.000	E-W(2): 0.206 *
	TH	2.00	301	3,200	0.094 *	V/C: 0.683
	LT	1.00	125	1,600	0.078	Lost Time: 0.100
Northbound	RT	0.00	186	0	0.000	ITS: 0.000
	TH	2.00	282	3,200	0.146 *	ICU: 0.783
	LT	1.00	152	1,600	0.095	LOS: C
Eastbound	RT	1.00	43	1,600	0.000	
	TH	2.00	353	3,200	0.110	
	LT	1.00	179	1,600	0.112 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	99	0	0.000	N-S(1): 0.335 *
	TH	2.00	272	1,600	0.161 *	N-S(2): 0.000
	LT	0.00	143	1,600	0.089	E-W(1): 0.239
Westbound	RT	1.00	537	1,600	0.291 *	E-W(2): 0.417 *
	TH	2.00	289	3,200	0.090	V/C: 0.752
	LT	1.00	186	1,600	0.116	Lost Time: 0.100
Northbound	RT	0.00	106	0	0.000	ITS: 0.000
	TH	2.00	452	3,200	0.174 *	ICU: 0.852
	LT	1.00	87	1,600	0.054	LOS: D
Eastbound	RT	1.00	99	1,600	0.035	
	TH	2.00	393	3,200	0.123	
	LT	1.00	202	1,600	0.126 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 21 - Hope Dr & Duarte Rd
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.035 *
	LT	0.00	0	0	0.000	E-W(1):	0.251 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.163
	TH	2.00	521	3,200	0.163	V/C:	0.286
	LT	1.00	66	1,600	0.041 *	Lost Time:	0.100
Northbound	RT	1.00	18	1,600	0.000	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.386
	LT	1.00	56	1,600	0.035 *	LOS:	A
Eastbound	RT	0.00	239	0	0.000		
	TH	2.00	433	3,200	0.210 *		
	LT	0.00	0	0	0.000		

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):	0.017
	TH	0.00	0	0	0.000 *	N-S(2):	0.146 *
	LT	0.00	0	0	0.000	E-W(1):	0.199 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.123
	TH	2.00	393	3,200	0.123	V/C:	0.345
	LT	1.00	15	1,600	0.009 *	Lost Time:	0.100
Northbound	RT	1.00	35	1,600	0.017	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.445
	LT	1.00	234	1,600	0.146 *	LOS:	A
Eastbound	RT	0.00	64	0	0.000		
	TH	2.00	545	3,200	0.190 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 23 - Highland Ave & Huntington Dr
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	39	1,600	0.016	N-S(1):	0.089
	TH	2.00	180	3,200	0.043 *	N-S(2):	0.093 *
	LT	0.00	57	1,600	0.036	E-W(1):	0.357
Westbound	RT	1.00	68	1,600	0.025	E-W(2):	0.504 *
	TH	2.00	1,556	3,200	0.486 *	V/C:	0.597
	LT	1.00	440	1,600	0.275	Lost Time:	0.100
Northbound	RT	1.00	169	1,600	0.000	ITS:	0.000
	TH	2.00	92	3,200	0.053	ICU:	0.697
	LT	0.00	80	1,600	0.050 *	LOS:	B
Eastbound	RT	1.00	58	1,600	0.011		
	TH	2.00	263	3,200	0.082		
	LT	1.00	28	1,600	0.018 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	51	1,600	0.022	N-S(1):	0.167 *
	TH	2.00	109	3,200	0.037	N-S(2):	0.085
	LT	0.00	75	1,600	0.047 *	E-W(1):	0.407 *
Westbound	RT	1.00	38	1,600	0.000	E-W(2):	0.173
	TH	2.00	490	3,200	0.153	V/C:	0.574
	LT	1.00	117	1,600	0.073 *	Lost Time:	0.100
Northbound	RT	1.00	250	1,600	0.120 *	ITS:	0.000
	TH	2.00	94	3,200	0.053	ICU:	0.674
	LT	0.00	77	1,600	0.048	LOS:	B
Eastbound	RT	1.00	143	1,600	0.065		
	TH	2.00	1,069	3,200	0.334 *		
	LT	1.00	32	1,600	0.020		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 24 - Highland Ave & Central Ave
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	104	1,600	0.049	N-S(1):	0.103
	TH	2.00	487	3,200	0.104 *	N-S(2):	0.158 *
	LT	0.00	73	1,600	0.046	E-W(1):	0.306
Westbound	RT	0.00	64	0	0.000	E-W(2):	0.465 *
	TH	1.00	286	1,600	0.433 *	V/C:	0.623
	LT	0.00	343	1,600	0.214	Lost Time:	0.100
Northbound	RT	1.00	125	1,600	0.000	ITS:	0.000
	TH	2.00	151	3,200	0.057	ICU:	0.723
	LT	0.00	86	1,600	0.054 *	LOS:	C
Eastbound	RT	1.00	86	1,600	0.027		
	TH	1.00	96	1,600	0.092		
	LT	0.00	51	1,600	0.032 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	61	1,600	0.017	N-S(1):	0.361 *
	TH	2.00	183	3,200	0.063	N-S(2):	0.093
	LT	0.00	157	1,600	0.098 *	E-W(1):	0.295 *
Westbound	RT	0.00	22	0	0.000	E-W(2):	0.158
	TH	1.00	94	1,600	0.116	V/C:	0.656
	LT	0.00	70	1,600	0.044 *	Lost Time:	0.100
Northbound	RT	1.00	455	1,600	0.263 *	ITS:	0.000
	TH	2.00	364	3,200	0.129	ICU:	0.756
	LT	0.00	48	1,600	0.030	LOS:	C
Eastbound	RT	0.00	40	0	0.000		
	TH	1.00	294	1,600	0.251 *		
	LT	0.00	67	1,600	0.042		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 26 - Highland Ave & Business Center Dr
Description: Existing Plus Project

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

N-S Split Phase : N
 E-W Split Phase : Y
 Lost Time (% of cycle) : 10
 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	20	0	0.000	N-S(1):	0.126
	TH	2.00	791	3,200	0.253 *	N-S(2):	0.257 *
	LT	1.00	40	1,600	0.025	E-W(1):	0.016 *
Westbound	RT	0.00	13	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.008	V/C:	0.273
	LT	1.00	12	1,600	0.008 *	Lost Time:	0.100
Northbound	RT	0.00	34	0	0.000	ITS:	0.000
	TH	2.00	289	3,200	0.101	ICU:	0.373
	LT	1.00	6	1,600	0.004 *	LOS:	A
Eastbound	RT	0.00	4	0	0.000		
	TH	1.00	0	1,600	0.003		
	LT	1.00	13	1,600	0.008 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	5	0	0.000	N-S(1):	0.241 *
	TH	2.00	248	3,200	0.079	N-S(2):	0.087
	LT	1.00	17	1,600	0.011 *	E-W(1):	0.037 *
Westbound	RT	0.00	23	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.014	V/C:	0.278
	LT	1.00	38	1,600	0.024 *	Lost Time:	0.100
Northbound	RT	0.00	24	0	0.000	ITS:	0.000
	TH	2.00	713	3,200	0.230 *	ICU:	0.378
	LT	1.00	13	1,600	0.008	LOS:	A
Eastbound	RT	0.00	10	0	0.000		
	TH	1.00	1	1,600	0.007		
	LT	1.00	20	1,600	0.013 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 27 - I-605/Mt Olive Dr & Huntington Dr
Description: Existing Plus Project

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

N-S Split Phase : Y
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	91	0	0.000	N-S(1):	0.482 *
	TH	2.00	286	3,200	0.118 *	N-S(2):	0.000
	LT	1.00	54	1,600	0.034	E-W(1):	0.313
Westbound	RT	1.00	123	1,600	0.060	E-W(2):	0.405 *
	TH	2.00	1,182	3,200	0.369 *	V/C:	0.887
	LT	1.00	384	1,600	0.240	Lost Time:	0.100
Northbound	RT	1.00	282	1,600	0.056	ITS:	0.000
	TH	0.26	136	416	0.327	ICU:	0.987
	LT	1.74	911	2,506	0.364 *	LOS:	E
Eastbound	RT	1.00	256	1,600	0.000		
	TH	2.00	234	3,200	0.073		
	LT	1.00	58	1,600	0.036 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	49	0	0.000	N-S(1):	0.444 *
	TH	2.00	286	3,200	0.105 *	N-S(2):	0.000
	LT	1.00	78	1,600	0.049	E-W(1):	0.496 *
Westbound	RT	1.00	36	1,600	0.000	E-W(2):	0.154
	TH	2.00	403	3,200	0.126	V/C:	0.940
	LT	1.00	262	1,600	0.164 *	Lost Time:	0.100
Northbound	RT	1.00	674	1,600	0.339 *	ITS:	0.000
	TH	0.84	188	1,352	0.139	ICU:	1.040
	LT	1.16	257	1,663	0.155	LOS:	F
Eastbound	RT	1.00	655	1,600	0.332 *		
	TH	2.00	797	3,200	0.249		
	LT	1.00	45	1,600	0.028		

* - Denotes critical movement

HCM

HCM 2010 Signalized Intersection Summary
3: Evergreen St & Mountain Ave

Duarte City of Hope
Existing Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	268	269	183	0	0	0	0	364	142	294	411	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	288	289	197				0	391	153	316	442	0
Adj No. of Lanes	1	2	1				0	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	423	844	378				0	1463	565	594	2073	0
Arrive On Green	0.24	0.24	0.24				0.00	0.59	0.59	0.59	0.59	0.00
Sat Flow, veh/h	1774	3539	1583				0	2590	965	859	3632	0
Grp Volume(v), veh/h	288	289	197				0	276	268	316	442	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1770	1692	859	1770	0
Q Serve(g_s), s	6.7	3.1	4.9				0.0	3.5	3.6	13.1	2.7	0.0
Cycle Q Clear(g_c), s	6.7	3.1	4.9				0.0	3.5	3.6	16.6	2.7	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	423	844	378				0	1036	991	594	2073	0
V/C Ratio(X)	0.68	0.34	0.52				0.00	0.27	0.27	0.53	0.21	0.00
Avail Cap(c_a), veh/h	624	1244	556				0	1399	1338	770	2799	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.8	14.4	15.1				0.0	4.6	4.6	8.7	4.5	0.0
Incr Delay (d2), s/veh	1.9	0.2	1.1				0.0	0.1	0.1	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	3.5	1.5	2.3				0.0	1.7	1.7	3.2	1.3	0.0
LnGrp Delay(d),s/veh	17.7	14.6	16.2				0.0	4.8	4.8	9.5	4.5	0.0
LnGrp LOS	B	B	B					A	A	A	A	
Approach Vol, veh/h		774						544			758	
Approach Delay, s/veh		16.2						4.8			6.6	
Approach LOS		B						A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		30.7		14.9		30.7						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		36.0		16.0		36.0						
Max Q Clear Time (g_c+I1), s		5.6		8.7		18.6						
Green Ext Time (p_c), s		10.3		2.1		8.1						
Intersection Summary												
HCM 2010 Ctrl Delay			9.7									
HCM 2010 LOS			A									

Intersection													
Int Delay, s/veh	69.9												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	321	0	0	1250	0	0	0	615	0	0	581
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	349	0	0	1359	0	0	0	668	0	0	632

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1359	0	0	349	0	0	1028	1708	174	1533	1708	679
Stage 1	-	-	-	-	-	-	349	349	-	1359	1359	-
Stage 2	-	-	-	-	-	-	679	1359	-	174	349	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	502	-	-	1207	-	-	188	90	839	80	90	~ 394
Stage 1	-	-	-	-	-	-	640	632	-	157	215	-
Stage 2	-	-	-	-	-	-	408	215	-	811	632	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	502	-	-	1207	-	-	-	90	839	16	90	~ 394
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	90	-	16	90	-
Stage 1	-	-	-	-	-	-	640	632	-	157	215	-
Stage 2	-	-	-	-	-	-	-	215	-	165	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	23.8	\$ 307.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	502	-	-	1207	-	-	394
HCM Lane V/C Ratio	0.797	-	-	-	-	-	-	1.603
HCM Control Delay (s)	23.8	0	-	-	0	-	-	\$ 307.9
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	8.4	0	-	-	0	-	-	36.2

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

HCM 2010 Signalized Intersection Summary
 9: Arrow Hwy & I-605 SB Off-Ramp

Duarte City of Hope
 Existing Plus Project AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑		↵	↵		
Volume (veh/h)	0	504	1766	0	380	570		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863		
Adj Flow Rate, veh/h	0	525	1840	0	396	0		
Adj No. of Lanes	0	3	2	0	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	0	2	2	0	2	2		
Cap, veh/h	0	3100	2158	0	464	414		
Arrive On Green	0.00	0.61	0.61	0.00	0.26	0.00		
Sat Flow, veh/h	0	5421	3725	0	1774	1583		
Grp Volume(v), veh/h	0	525	1840	0	396	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	0	1774	1583		
Q Serve(g_s), s	0.0	2.8	26.2	0.0	13.2	0.0		
Cycle Q Clear(g_c), s	0.0	2.8	26.2	0.0	13.2	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	3100	2158	0	464	414		
V/C Ratio(X)	0.00	0.17	0.85	0.00	0.85	0.00		
Avail Cap(c_a), veh/h	0	3199	2227	0	801	715		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	5.3	9.8	0.0	21.8	0.0		
Incr Delay (d2), s/veh	0.0	0.0	3.3	0.0	4.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(-26165%),veh/ln	0.0	1.3	13.5	0.0	7.0	0.0		
LnGrp Delay(d),s/veh	0.0	5.3	13.2	0.0	26.4	0.0		
LnGrp LOS		A	B		C			
Approach Vol, veh/h		525	1840		396			
Approach Delay, s/veh		5.3	13.2		26.4			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				41.8		20.2		41.8
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				39.0		28.0		39.0
Max Q Clear Time (g_c+I1), s				4.8		15.2		28.2
Green Ext Time (p_c), s				25.6		1.0		9.6
Intersection Summary								
HCM 2010 Ctrl Delay			13.6					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 13: Evergreen St & Buena Vista St

Duarte City of Hope
 Existing Plus Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔						↑↑	↗	↘	↑↑	
Volume (veh/h)	294	12	406	0	0	0	0	388	198	216	503	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	354	14	489				0	467	239	260	606	0
Adj No. of Lanes	0	2	0				0	2	1	1	2	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	553	22	512				0	1885	843	470	1885	0
Arrive On Green	0.32	0.32	0.32				0.00	0.53	0.53	0.53	0.53	0.00
Sat Flow, veh/h	1710	68	1583				0	3632	1583	739	3632	0
Grp Volume(v), veh/h	368	0	489				0	467	239	260	606	0
Grp Sat Flow(s),veh/h/ln1777	0	1583					0	1770	1583	739	1770	0
Q Serve(g_s), s	9.8	0.0	16.8				0.0	4.0	4.6	16.3	5.4	0.0
Cycle Q Clear(g_c), s	9.8	0.0	16.8				0.0	4.0	4.6	20.2	5.4	0.0
Prop In Lane	0.96		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	575	0	512				0	1885	843	470	1885	0
V/C Ratio(X)	0.64	0.00	0.95				0.00	0.25	0.28	0.55	0.32	0.00
Avail Cap(c_a), veh/h	575	0	512				0	2164	968	529	2164	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.0	0.0	18.4				0.0	7.0	7.2	12.4	7.3	0.0
Incr Delay (d2), s/veh	2.4	0.0	28.5				0.0	0.1	0.2	1.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.0	0.0	11.4				0.0	1.9	2.0	3.4	2.6	0.0
LnGrp Delay(d),s/veh	18.4	0.0	46.9				0.0	7.1	7.3	13.5	7.4	0.0
LnGrp LOS	B		D					A	A	B	A	
Approach Vol, veh/h		857						706			866	
Approach Delay, s/veh		34.7						7.2			9.2	
Approach LOS		C						A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		33.6		22.0		33.6						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		34.0		18.0		34.0						
Max Q Clear Time (g_c+I1), s		6.6		18.8		22.2						
Green Ext Time (p_c), s		12.3		0.0		7.4						
Intersection Summary												
HCM 2010 Ctrl Delay			17.6									
HCM 2010 LOS			B									

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	1	12	13	1	39	9	536	52	6	868	15
Conflicting Peds, #/hr	0	0	1	0	0	1	4	0	5	5	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	3	1	13	14	1	42	10	583	57	7	943	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1278	1626	486	1117	1605	326	961	0	0	640	0	0
Stage 1	966	966	-	631	631	-	-	-	-	-	-	-
Stage 2	312	660	-	486	974	-	-	-	-	-	-	-
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	123	101	527	162	104	670	712	-	-	940	-	-
Stage 1	273	331	-	436	473	-	-	-	-	-	-	-
Stage 2	673	458	-	531	328	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	110	97	524	151	100	667	709	-	-	936	-	-
Mov Cap-2 Maneuver	110	97	-	151	100	-	-	-	-	-	-	-
Stage 1	267	325	-	426	462	-	-	-	-	-	-	-
Stage 2	612	448	-	506	322	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.5	17.6	0.2	0.2
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	709	-	-	265	343	936	-
HCM Lane V/C Ratio	0.014	-	-	0.066	0.168	0.007	-
HCM Control Delay (s)	10.1	0.1	-	19.5	17.6	8.9	0.1
HCM Lane LOS	B	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.2	0.6	0	-

Intersection

Int Delay, s/veh 2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	25	26	445	305	169	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	230	-
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	27	28	484	332	184	216

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1125	408	0 0 815 0
Stage 1	649	-	- - - -
Stage 2	476	-	- - - -
Critical Hdwy	6.84	6.94	- - 4.14 -
Critical Hdwy Stg 1	5.84	-	- - - -
Critical Hdwy Stg 2	5.84	-	- - - -
Follow-up Hdwy	3.52	3.32	- - 2.22 -
Pot Cap-1 Maneuver	199	593	- - 808 -
Stage 1	482	-	- - - -
Stage 2	591	-	- - - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	154	593	- - 808 -
Mov Cap-2 Maneuver	154	-	- - - -
Stage 1	482	-	- - - -
Stage 2	456	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	22.1	0	4.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	154	593	808	-
HCM Lane V/C Ratio	-	-	0.176	0.048	0.227	-
HCM Control Delay (s)	-	-	33.3	11.4	10.8	-
HCM Lane LOS	-	-	D	B	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	0.9	-

Intersection													
Int Delay, s/veh	92.2												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	346	0	0	494	4	359	0	82	0	0	6
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									
Storage Length	-	-	-	-	-	-	0	-	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	376	0	0	537	4	390	0	89	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	541	0	0	376	0	0	931	930	376	928	928	539
Stage 1	-	-	-	-	-	-	389	389	-	539	539	-
Stage 2	-	-	-	-	-	-	542	541	-	389	389	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1028	-	-	1182	-	-	~ 247	267	670	248	268	542
Stage 1	-	-	-	-	-	-	635	608	-	527	522	-
Stage 2	-	-	-	-	-	-	525	521	-	635	608	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1028	-	-	1182	-	-	~ 242	265	670	214	266	542
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 242	265	-	214	266	-
Stage 1	-	-	-	-	-	-	629	603	-	522	522	-
Stage 2	-	-	-	-	-	-	519	521	-	546	603	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	271	11.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	670	1028	-	-	1182	-	-	542
HCM Lane V/C Ratio	1.612	0.133	0.006	-	-	-	-	-	0.012
HCM Control Delay (s)	\$ 330.3	11.2	8.5	0	-	0	-	-	11.7
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	24.5	0.5	0	-	-	0	-	-	0

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

Intersection

Int Delay, s/veh 0.9

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	46	995	8	4	513	18	10
Conflicting Peds, #/hr	0	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	0	-	-	113	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	50	1082	9	4	558	20	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	407	0	548
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	6.44	-	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.52	-	3.32
Pot Cap-1 Maneuver	793	-	480
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	793	-	479
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0.1	32.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	159	793	-	-	634	-
HCM Lane V/C Ratio	0.191	0.063	-	-	0.007	-
HCM Control Delay (s)	32.9	9.8	-	-	10.7	-
HCM Lane LOS	D	A	-	-	B	-
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	6.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	671	336	133	449	73	10
Conflicting Peds, #/hr	0	2	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	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	729	365	145	488	79	11

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1445
Stage 1	-	-	912
Stage 2	-	-	533
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	633	123
Stage 1	-	-	352
Stage 2	-	-	553
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	632	95
Mov Cap-2 Maneuver	-	-	95
Stage 1	-	-	352
Stage 2	-	-	425

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	116.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	95	480	-	-	632	-
HCM Lane V/C Ratio	0.835	0.023	-	-	0.229	-
HCM Control Delay (s)	130.8	12.7	-	-	12.4	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	4.6	0.1	-	-	0.9	-

Intersection

Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	7	15	3	0	75	4	19	0	5	15	18
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	0	8	16	3	0	82	4	21	0	5	16	20
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.5	7.9	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	28%	77%	72%
Vol Thru, %	39%	60%	4%	24%
Vol Right, %	47%	12%	19%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	38	25	98	93
LT Vol	5	7	75	67
Through Vol	15	15	4	22
RT Vol	18	3	19	4
Lane Flow Rate	41	27	107	101
Geometry Grp	1	1	1	1
Degree of Util (X)	0.047	0.033	0.125	0.121
Departure Headway (Hd)	4.09	4.355	4.239	4.317
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	880	827	834	820
Service Time	2.092	2.357	2.326	2.402
HCM Lane V/C Ratio	0.047	0.033	0.128	0.123
HCM Control Delay	7.3	7.5	7.9	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0.4	0.4

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	67	22	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	73	24	4
Number of Lanes	0	0	1	0

Approach SB

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

Lane

Intersection

Int Delay, s/veh 1.9

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1	337	116	213	576	9	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	105	-	-	105	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1	366	126	232	626	10	17

Major/Minor	Major1	Major2	Minor1				
Conflicting Flow All	457	0	0	492	0	1208	246
Stage 1	-	-	-	-	-	432	-
Stage 2	-	-	-	-	-	776	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	737	-	-	1068	-	176	754
Stage 1	-	-	-	-	-	622	-
Stage 2	-	-	-	-	-	414	-
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	737	-	-	1068	-	138	754
Mov Cap-2 Maneuver	-	-	-	-	-	138	-
Stage 1	-	-	-	-	-	622	-
Stage 2	-	-	-	-	-	324	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	289	737	-	-	1068	-
HCM Lane V/C Ratio	0.094	0.001	-	-	0.217	-
HCM Control Delay (s)	18.7	9.9	-	-	9.3	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0	-	-	0.8	-

Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	38	4	32	1	1	15	7	300	6	86	834	32
Conflicting Peds, #/hr	0	0	0	0	0	1	5	0	2	1	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	41	4	35	1	1	16	8	326	7	93	907	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1291	1460	476	988	1474	172	941	0	0	334	0	0
Stage 1	1111	1111	-	346	346	-	-	-	-	-	-	-
Stage 2	180	349	-	642	1128	-	-	-	-	-	-	-
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	128	535	201	125	842	724	-	-	1222	-	-
Stage 1	223	283	-	643	634	-	-	-	-	-	-	-
Stage 2	804	632	-	429	278	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	102	106	533	157	103	838	721	-	-	1217	-	-
Mov Cap-2 Maneuver	102	106	-	157	103	-	-	-	-	-	-	-
Stage 1	220	237	-	633	625	-	-	-	-	-	-	-
Stage 2	773	623	-	329	233	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49.8	12.5	0.3	1.2
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	721	-	-	157	500	1217	-	-
HCM Lane V/C Ratio	0.011	-	-	0.512	0.037	0.077	-	-
HCM Control Delay (s)	10	0.1	-	49.8	12.5	8.2	0.5	-
HCM Lane LOS	B	A	-	E	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	2.5	0.1	0.2	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1	1
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	4.12	6.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	2.218	3.518
Pot Cap-1 Maneuver	-	-	1622	1022
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	894
Mov Cap-2 Maneuver	-	-	-	894
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	0	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	4.14	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

HCM 2010 Signalized Intersection Summary
 3: Evergreen St & Mountain Ave

Duarte City of Hope
 Existing Plus Project PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	1028	138	0	0	0	0	463	178	400	530	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	222	1105	148				0	498	191	430	570	0
Adj No. of Lanes	1	2	1				0	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	532	1062	475				0	1421	542	464	2006	0
Arrive On Green	0.30	0.30	0.30				0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	1774	3539	1583				0	2600	956	751	3632	0
Grp Volume(v), veh/h	222	1105	148				0	351	338	430	570	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1770	1694	751	1770	0
Q Serve(g_s), s	6.0	18.0	4.3				0.0	6.4	6.5	27.5	5.0	0.0
Cycle Q Clear(g_c), s	6.0	18.0	4.3				0.0	6.4	6.5	34.0	5.0	0.0
Prop In Lane	1.00		1.00				0.00		0.56	1.00		0.00
Lane Grp Cap(c), veh/h	532	1062	475				0	1003	960	464	2006	0
V/C Ratio(X)	0.42	1.04	0.31				0.00	0.35	0.35	0.93	0.28	0.00
Avail Cap(c_a), veh/h	532	1062	475				0	1003	960	464	2006	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.8	21.0	16.2				0.0	7.0	7.0	19.0	6.7	0.0
Incr Delay (d2), s/veh	0.5	38.8	0.4				0.0	0.2	0.2	24.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	3.0	14.4	1.9				0.0	3.2	3.1	10.2	2.4	0.0
LnGrp Delay(d),s/veh	17.3	59.8	16.6				0.0	7.2	7.3	43.7	6.8	0.0
LnGrp LOS	B	F	B					A	A	D	A	
Approach Vol, veh/h		1475						689			1000	
Approach Delay, s/veh		49.1						7.2			22.7	
Approach LOS		D						A			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		22.0		38.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		34.0		18.0		34.0						
Max Q Clear Time (g_c+I1), s		8.5		20.0		36.0						
Green Ext Time (p_c), s		13.8		0.0		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			31.6									
HCM 2010 LOS			C									

Intersection												
Int Delay, s/veh	43.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1146	0	0	964	0	0	0	518	0	0	484
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1246	0	0	1048	0	0	0	563	0	0	526

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1048	0	0	1246	0	0	1770	2294	623	1671	2294	524
Stage 1	-	-	-	-	-	-	1246	1246	-	1048	1048	-
Stage 2	-	-	-	-	-	-	524	1048	-	623	1246	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	660	-	-	554	-	-	53	39 ~ 429	-	63	39 ~ 498	-
Stage 1	-	-	-	-	-	-	184	244	-	244	303	-
Stage 2	-	-	-	-	-	-	504	303	-	440	244	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	660	-	-	554	-	-	-	39 ~ 429	-	-	39 ~ 498	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	39	-	-	39	-
Stage 1	-	-	-	-	-	-	184	244	-	244	303	-
Stage 2	-	-	-	-	-	-	-	303	-	-	244	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	183.2	84.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	660	-	-	554	-	-	498
HCM Lane V/C Ratio	1.312	-	-	-	-	-	-	1.056
HCM Control Delay (s)	183.2	0	-	-	0	-	-	84.9
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	25.2	0	-	-	0	-	-	15.9

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

HCM 2010 Signalized Intersection Summary
 9: Arrow Hwy & I-605 SB Off-Ramp

Duarte City of Hope
 Existing Plus Project PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑		↵	↵		
Volume (veh/h)	0	1272	435	0	236	241		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863		
Adj Flow Rate, veh/h	0	1325	453	0	246	0		
Adj No. of Lanes	0	3	2	0	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	0	2	2	0	2	2		
Cap, veh/h	0	2525	1758	0	384	343		
Arrive On Green	0.00	0.50	0.50	0.00	0.22	0.00		
Sat Flow, veh/h	0	5421	3725	0	1774	1583		
Grp Volume(v), veh/h	0	1325	453	0	246	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	0	1774	1583		
Q Serve(g_s), s	0.0	4.9	2.1	0.0	3.5	0.0		
Cycle Q Clear(g_c), s	0.0	4.9	2.1	0.0	3.5	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2525	1758	0	384	343		
V/C Ratio(X)	0.00	0.52	0.26	0.00	0.64	0.00		
Avail Cap(c_a), veh/h	0	2919	2032	0	1018	909		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	4.8	4.0	0.0	9.9	0.0		
Incr Delay (d2), s/veh	0.0	0.2	0.1	0.0	1.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(-26165%),veh/ln	0.0	2.2	1.0	0.0	1.9	0.0		
LnGrp Delay(d),s/veh	0.0	4.9	4.1	0.0	11.7	0.0		
LnGrp LOS		A	A		B			
Approach Vol, veh/h		1325	453		246			
Approach Delay, s/veh		4.9	4.1		11.7			
Approach LOS		A	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				17.8		10.0		17.8
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				16.0		16.0		16.0
Max Q Clear Time (g_c+I1), s				6.9		5.5		4.1
Green Ext Time (p_c), s				6.9		0.5		8.7
Intersection Summary								
HCM 2010 Ctrl Delay			5.6					
HCM 2010 LOS			A					

HCM 2010 Signalized Intersection Summary
 13: Evergreen St & Buena Vista St

Duarte City of Hope
 Existing Plus Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔						↑↑	↗	↘	↑↑	
Volume (veh/h)	259	372	97	0	0	0	0	716	428	228	454	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	312	448	117				0	863	516	275	547	0
Adj No. of Lanes	0	2	0				0	2	1	1	2	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	344	526	142				0	2067	925	296	2067	0
Arrive On Green	0.28	0.28	0.28				0.00	0.58	0.58	0.58	0.58	0.00
Sat Flow, veh/h	1216	1860	501				0	3632	1583	391	3632	0
Grp Volume(v), veh/h	463	0	414				0	863	516	275	547	0
Grp Sat Flow(s),veh/h/ln	1802	0	1774				0	1770	1583	391	1770	0
Q Serve(g_s), s	14.8	0.0	13.1				0.0	8.0	12.1	27.0	4.6	0.0
Cycle Q Clear(g_c), s	14.8	0.0	13.1				0.0	8.0	12.1	35.0	4.6	0.0
Prop In Lane	0.67		0.28				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	509	0	501				0	2067	925	296	2067	0
V/C Ratio(X)	0.91	0.00	0.83				0.00	0.42	0.56	0.93	0.26	0.00
Avail Cap(c_a), veh/h	511	0	503				0	2067	925	296	2067	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	20.8	0.0	20.1				0.0	6.9	7.7	21.3	6.1	0.0
Incr Delay (d2), s/veh	20.0	0.0	10.9				0.0	0.1	0.8	34.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	10.2	0.0	7.8				0.0	3.9	5.4	7.3	2.2	0.0
LnGrp Delay(d),s/veh	40.8	0.0	31.0				0.0	7.0	8.4	55.4	6.2	0.0
LnGrp LOS	D		C					A	A	E	A	
Approach Vol, veh/h		877						1379			822	
Approach Delay, s/veh		36.2						7.5			22.7	
Approach LOS		D						A			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		39.0		20.9		39.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		35.0		17.0		35.0						
Max Q Clear Time (g_c+I1), s		14.1		16.8		37.0						
Green Ext Time (p_c), s		16.1		0.1		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			19.7									
HCM 2010 LOS			B									

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	4	15	13	1	38	13	1108	22	25	436	19
Conflicting Peds, #/hr	0	0	1	0	0	1	4	0	5	5	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	0	4	16	14	1	41	14	1204	24	27	474	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1172	1798	253	1540	1796	620	496	0	0	1229	0	0
Stage 1	540	540	-	1246	1246	-	-	-	-	-	-	-
Stage 2	632	1258	-	294	550	-	-	-	-	-	-	-
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	79	746	79	79	431	1064	-	-	563	-	-
Stage 1	494	519	-	184	244	-	-	-	-	-	-	-
Stage 2	435	241	-	690	514	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	121	70	742	67	70	429	1060	-	-	561	-	-
Mov Cap-2 Maneuver	121	70	-	67	70	-	-	-	-	-	-	-
Stage 1	473	484	-	176	234	-	-	-	-	-	-	-
Stage 2	373	231	-	621	479	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21	35.1	0.3	1
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1060	-	-	246	175	561	-
HCM Lane V/C Ratio	0.013	-	-	0.084	0.323	0.048	-
HCM Control Delay (s)	8.4	0.2	-	21	35.1	11.7	0.4
HCM Lane LOS	A	A	-	C	E	B	A
HCM 95th %tile Q(veh)	0	-	-	0.3	1.3	0.2	-

Intersection

Int Delay, s/veh 7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	201	215	399	27	24	476
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	230	-
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	218	234	434	29	26	517

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	759	232	0 0 463 0
Stage 1	448	-	- - - -
Stage 2	311	-	- - - -
Critical Hdwy	6.84	6.94	- - 4.14 -
Critical Hdwy Stg 1	5.84	-	- - - -
Critical Hdwy Stg 2	5.84	-	- - - -
Follow-up Hdwy	3.52	3.32	- - 2.22 -
Pot Cap-1 Maneuver	343	770	- - 1095 -
Stage 1	611	-	- - - -
Stage 2	716	-	- - - -
Platoon blocked, %			- - - -
Mov Cap-1 Maneuver	335	770	- - 1095 -
Mov Cap-2 Maneuver	335	-	- - - -
Stage 1	611	-	- - - -
Stage 2	699	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	22.4	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	335	770	1095	-
HCM Lane V/C Ratio	-	-	0.652	0.304	0.024	-
HCM Control Delay (s)	-	-	33.8	11.7	8.4	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	4.3	1.3	0.1	-

Intersection												
Int Delay, s/veh	34.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	360	0	0	303	4	314	0	106	2	0	21
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									
Storage Length	-	-	-	-	-	-	0	-	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	12	391	0	0	329	4	341	0	115	2	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	334	0	0	391	0	0	758	749	391	747	747	332
Stage 1	-	-	-	-	-	-	415	415	-	332	332	-
Stage 2	-	-	-	-	-	-	343	334	-	415	415	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1225	-	-	1168	-	-	~ 324	341	658	329	341	710
Stage 1	-	-	-	-	-	-	615	592	-	681	644	-
Stage 2	-	-	-	-	-	-	672	643	-	615	592	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1225	-	-	1168	-	-	~ 310	337	658	269	337	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 310	337	-	269	337	-
Stage 1	-	-	-	-	-	-	607	584	-	672	644	-
Stage 2	-	-	-	-	-	-	650	643	-	501	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	91.5	11
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	658	1225	-	-	1168	-	-	621
HCM Lane V/C Ratio	1.101	0.175	0.01	-	-	-	-	-	0.04
HCM Control Delay (s)	118.5	11.6	8	0	-	0	-	-	11
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	13.4	0.6	0	-	-	0	-	-	0.1

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

Intersection

Int Delay, s/veh 0.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	50	562	11	13	952	13	4
Conflicting Peds, #/hr	0	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	0	-	-	113	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	54	611	12	14	1035	14	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	755	0	0	623	0	1272	314
Stage 1	-	-	-	-	-	726	-
Stage 2	-	-	-	-	-	546	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	476	-	-	954	-	159	682
Stage 1	-	-	-	-	-	440	-
Stage 2	-	-	-	-	-	544	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	476	-	-	952	-	156	680
Mov Cap-2 Maneuver	-	-	-	-	-	156	-
Stage 1	-	-	-	-	-	440	-
Stage 2	-	-	-	-	-	535	-

Approach	EB	WB	NB
HCM Control Delay, s	1.1	0.1	25.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	191	476	-	-	952	-
HCM Lane V/C Ratio	0.097	0.114	-	-	0.015	-
HCM Control Delay (s)	25.9	13.5	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.4	-	-	0	-

Intersection

Int Delay, s/veh 52.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	482	82	18	605	340	123
Conflicting Peds, #/hr	0	2	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	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	524	89	20	658	370	134

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	936
Stage 1	-	-	568
Stage 2	-	-	368
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	962	~ 264
Stage 1	-	-	530
Stage 2	-	-	670
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	961	~ 258
Mov Cap-2 Maneuver	-	-	~ 258
Stage 1	-	-	530
Stage 2	-	-	655

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	188.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	258	687	-	-	961	-
HCM Lane V/C Ratio	1.432	0.195	-	-	0.02	-
HCM Control Delay (s)	252.1	11.5	-	-	8.8	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	20.7	0.7	-	-	0.1	-

Notes

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

Intersection												
Intersection Delay, s/veh	7.3											
Intersection LOS	A											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	21	1	0	3	17	30	0	6	11	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	34	23	1	0	3	18	33	0	7	12	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.6	7.1	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	58%	6%	30%
Vol Thru, %	61%	40%	34%	20%
Vol Right, %	6%	2%	60%	49%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	18	53	50	69
LT Vol	6	31	3	21
Through Vol	11	21	17	14
RT Vol	1	1	30	34
Lane Flow Rate	20	58	54	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.023	0.068	0.057	0.081
Departure Headway (Hd)	4.219	4.246	3.794	3.906
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	841	839	936	910
Service Time	2.282	2.293	1.848	1.962
HCM Lane V/C Ratio	0.024	0.069	0.058	0.082
HCM Control Delay	7.4	7.6	7.1	7.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.2	0.3

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	21	14	34
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	23	15	37
Number of Lanes	0	0	1	0

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

Lane

Intersection

Int Delay, s/veh 7.1

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	6	573	13	24	283	117	155
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	105	-	-	105	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	7	623	14	26	308	127	168

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	225	0	0	637	0	849	318
Stage 1	-	-	-	-	-	643	-
Stage 2	-	-	-	-	-	206	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	1032	-	-	943	-	300	678
Stage 1	-	-	-	-	-	485	-
Stage 2	-	-	-	-	-	808	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	1032	-	-	943	-	292	678
Mov Cap-2 Maneuver	-	-	-	-	-	292	-
Stage 1	-	-	-	-	-	485	-
Stage 2	-	-	-	-	-	786	-

Approach	EB		WB		NB
HCM Control Delay, s	0.1		0.7		29.6
HCM LOS					D

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	432	1032	-	-	943	-
HCM Lane V/C Ratio	0.684	0.006	-	-	0.028	-
HCM Control Delay (s)	29.6	8.5	-	-	8.9	-
HCM Lane LOS	D	A	-	-	A	-
HCM 95th %tile Q(veh)	5	0	-	-	0.1	-

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	10	4	3	93	4	755	8	18	258	16
Conflicting Peds, #/hr	0	0	0	0	0	1	5	0	2	1	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	21	0	11	4	3	101	4	821	9	20	280	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	750	1167	154	1014	1172	421	298	0	0	830	0	0
Stage 1	328	328	-	835	835	-	-	-	-	-	-	-
Stage 2	422	839	-	179	337	-	-	-	-	-	-	-
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	300	192	864	193	191	581	1260	-	-	798	-	-
Stage 1	659	646	-	328	381	-	-	-	-	-	-	-
Stage 2	580	379	-	805	640	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	237	185	860	184	184	578	1255	-	-	795	-	-
Mov Cap-2 Maneuver	237	185	-	184	184	-	-	-	-	-	-	-
Stage 1	655	627	-	326	378	-	-	-	-	-	-	-
Stage 2	470	376	-	768	621	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.7	14.1	0	0.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1255	-	-	316	503	795	-	-
HCM Lane V/C Ratio	0.003	-	-	0.1	0.216	0.025	-	-
HCM Control Delay (s)	7.9	0	-	17.7	14.1	9.6	0.1	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.8	0.1	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	0	-	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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	1	0	0	1	1	1	1	1	0
Stage 1	-	-	-	-	-	-	1	1	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	1	1	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1622	-	-	1022	895	1084	1022	895	-
Stage 1	-	-	-	-	-	-	1022	895	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	895	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1622	-	-	-	894	1083	1022	894	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	894	-	1022	894	-
Stage 1	-	-	-	-	-	-	1021	894	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	894	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	0	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	4.14	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Existing Plus Project Plus Mitigation

ICU

Project Title: Duarte City of Hope
Intersection: 8 - I-605 NB Off-ramp & Live Oak Ave
Description: Existing Plus Project with Mitigation

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	581	1,600	0.363	N-S(1):	0.384 *
	TH	0.00	0	0	0.000	N-S(2):	0.363
	LT	0.00	0	0	0.000 *	E-W(1):	0.100
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.391 *
	TH	2.00	1,250	3,200	0.391 *	V/C:	0.775
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	1.00	615	1,600	0.384 *	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.875
	LT	0.00	0	0	0.000	LOS:	D
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	321	3,200	0.100		
	LT	0.00	0	0	0.000 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	484	1,600	0.303	N-S(1):	0.324 *
	TH	0.00	0	0	0.000	N-S(2):	0.303
	LT	0.00	0	0	0.000 *	E-W(1):	0.358 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.301
	TH	2.00	964	3,200	0.301	V/C:	0.682
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	1.00	518	1,600	0.324 *	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.782
	LT	0.00	0	0	0.000	LOS:	C
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	1,146	3,200	0.358 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 19 - Village Rd & Duarte Rd
Description: Existing Plus Project with Mitigation

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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): 0.046 *
	LT	0.00	0	0	0.000	E-W(1): 0.398 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.140
	TH	2.00	449	3,200	0.140	V/C: 0.444
	LT	1.00	133	1,600	0.083 *	Lost Time: 0.100
Northbound	RT	1.00	10	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.544
	LT	1.00	73	1,600	0.046 *	LOS: A
Eastbound	RT	0.00	336	0	0.000	
	TH	2.00	671	3,200	0.315 *	
	LT	0.00	0	0	0.000	

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): 0.071
	TH	0.00	0	0	0.000 *	N-S(2): 0.213 *
	LT	0.00	0	0	0.000	E-W(1): 0.187
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.189 *
	TH	2.00	605	3,200	0.189 *	V/C: 0.402
	LT	1.00	18	1,600	0.011	Lost Time: 0.100
Northbound	RT	1.00	123	1,600	0.071	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.502
	LT	1.00	340	1,600	0.213 *	LOS: A
Eastbound	RT	0.00	82	0	0.000	
	TH	2.00	482	3,200	0.176	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Future

ICU

Project Title: Duarte City of Hope
Intersection: 1 - Live Oak Ave & Arrow Hwy
Description: Future

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

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

OLA Movements :
 FF Movements: NBR, EBR,

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):	0.430 *
	LT	0.00	0	0	0.000	E-W(1):	0.271
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.628 *
	TH	2.00	2,010	3,200	0.628 *	V/C:	1.058
	LT	2.00	256	2,880	0.089	Lost Time:	0.100
Northbound	RT	1.00	248	1,600	0.000	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	1.158
	LT	2.00	1,238	2,880	0.430 *	LOS:	F
Eastbound	RT	1.00	702	1,600	0.000		
	TH	2.00	583	3,200	0.182		
	LT	0.00	0	0	0.000 *		

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):	0.000
	TH	0.00	0	0	0.000 *	N-S(2):	0.316 *
	LT	0.00	0	0	0.000	E-W(1):	0.484 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.228
	TH	2.00	731	3,200	0.228	V/C:	0.800
	LT	2.00	449	2,880	0.156 *	Lost Time:	0.100
Northbound	RT	1.00	319	1,600	0.000	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.900
	LT	2.00	909	2,880	0.316 *	LOS:	D
Eastbound	RT	1.00	2,341	1,600	0.000		
	TH	2.00	1,050	3,200	0.328 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 2 - Mountain Ave & Central Ave
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	154	0	0.000	N-S(1): 0.162
	TH	2.00	539	3,200	0.217 *	N-S(2): 0.341 *
	LT	0.00	0	0	0.000	E-W(1): 0.159
Westbound	RT	0.00	397	0	0.000	E-W(2): 0.355 *
	TH	2.00	739	3,200	0.355 *	V/C: 0.696
	LT	1.00	254	1,600	0.159	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	517	3,200	0.162	ICU: 0.796
	LT	1.00	199	1,600	0.124 *	LOS: C
Eastbound	RT	0.00	0	0	0.000	
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	226	0	0.000	N-S(1): 0.168
	TH	2.00	819	3,200	0.327 *	N-S(2): 0.453 *
	LT	0.00	0	0	0.000	E-W(1): 0.131
Westbound	RT	0.00	327	1,600	0.204 *	E-W(2): 0.204 *
	TH	2.00	245	1,600	0.153	V/C: 0.657
	LT	1.00	209	1,600	0.131	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	538	3,200	0.168	ICU: 0.757
	LT	1.00	202	1,600	0.126 *	LOS: C
Eastbound	RT	0.00	0	0	0.000	
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 3 - Mountain Ave & Evergreen Ave
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.381 *
	TH	2.00	457	3,200	0.143	N-S(2):	0.143
	LT	1.00	329	1,600	0.206 *	E-W(1):	0.126
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.185 *
	TH	0.00	0	0	0.000 *	V/C:	0.566
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	157	0	0.000	ITS:	0.000
	TH	2.00	404	3,200	0.175 *	ICU:	0.666
	LT	0.00	0	0	0.000	LOS:	B
Eastbound	RT	1.00	202	1,600	0.126		
	TH	2.00	310	3,200	0.097		
	LT	1.00	296	1,600	0.185 *		

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):	0.501 *
	TH	2.00	588	3,200	0.184	N-S(2):	0.184
	LT	1.00	447	1,600	0.279 *	E-W(1):	0.372 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.143
	TH	0.00	0	0	0.000	V/C:	0.873
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	197	0	0.000	ITS:	0.000
	TH	2.00	512	3,200	0.222 *	ICU:	0.973
	LT	0.00	0	0	0.000	LOS:	E
Eastbound	RT	1.00	152	1,600	0.095		
	TH	2.00	1,191	3,200	0.372 *		
	LT	1.00	228	1,600	0.143		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 4 - Mountain Ave & Duarte Rd
Description: Future

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	146	1,067	0.000	N-S(1): 0.320 *
	TH	1.00	146	1,067	0.137	N-S(2): 0.193
	LT	1.00	75	1,067	0.070 *	E-W(1): 0.175
Westbound	RT	1.00	139	1,067	0.060	E-W(2): 0.315 *
	TH	2.00	449	3,200	0.140 *	V/C: 0.635
	LT	1.00	111	1,600	0.069	Lost Time: 0.100
Northbound	RT	1.00	158	1,600	0.099	ITS: 0.000
	TH	1.00	267	1,067	0.250 *	
	LT	1.00	89	1,600	0.056	
Eastbound	RT	0.00	34	0	0.000	ICU: 0.735
	TH	2.00	304	3,200	0.106	
	LT	1.00	187	1,067	0.175 *	LOS: C

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	268	1,067	0.015	N-S(1): 0.277
	TH	1.00	287	1,067	0.269 *	N-S(2): 0.289 *
	LT	1.00	112	1,067	0.105	E-W(1): 0.259
Westbound	RT	1.00	139	1,067	0.025	E-W(2): 0.339 *
	TH	2.00	328	3,200	0.103 *	V/C: 0.628
	LT	1.00	89	1,600	0.056	Lost Time: 0.100
Northbound	RT	1.00	102	1,600	0.064	ITS: 0.000
	TH	1.00	183	1,067	0.172	
	LT	1.00	32	1,600	0.020 *	
Eastbound	RT	0.00	83	0	0.000	ICU: 0.728
	TH	2.00	565	3,200	0.203	
	LT	1.00	252	1,067	0.236 *	LOS: C

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 5 - Bateman Ave/Avenida Barbosa & Buena Vista St/Alpha St
Description: Future

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 :	NBR,		
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	4	0	0.000	N-S(1): 0.265 *
	TH	2.00	119	1,600	0.041 *	N-S(2): 0.000
	LT	0.00	8	1,600	0.005	E-W(1): 0.117 *
Westbound	RT	0.00	13	0	0.000	E-W(2): 0.018
	TH	1.00	9	1,600	0.014	V/C: 0.382
	LT	2.00	328	2,880	0.114 *	Lost Time: 0.100
Northbound	RT	2.00	839	3,200	0.148	ITS: 0.000
	TH	1.00	294	1,600	0.224 *	
	LT	0.00	64	1,600	0.040	
Eastbound	RT	1.00	13	1,600	0.000	ICU: 0.482
	TH	2.00	8	3,200	0.003 *	
	LT	1.00	6	1,600	0.004	LOS: A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	1	0	0.000	N-S(1): 0.186 *
	TH	2.00	283	1,600	0.094 *	N-S(2): 0.000
	LT	0.00	17	1,600	0.011	E-W(1): 0.316 *
Westbound	RT	0.00	13	0	0.000	E-W(2): 0.022
	TH	1.00	17	1,600	0.019	V/C: 0.502
	LT	2.00	768	2,880	0.267 *	Lost Time: 0.100
Northbound	RT	2.00	559	3,200	0.000	ITS: 0.000
	TH	1.00	134	1,600	0.092 *	
	LT	0.00	13	1,600	0.008	
Eastbound	RT	1.00	85	1,600	0.049 *	ICU: 0.602
	TH	2.00	33	3,200	0.010	
	LT	1.00	4	1,600	0.003	LOS: B

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 6 - Avenida Barbosa & Arrow Hwy
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	174	1,600	0.006	N-S(1):	0.096 *
	TH	0.00	0	0	0.000	N-S(2):	0.006
	LT	2.00	277	2,880	0.096 *	E-W(1):	0.157
Westbound	RT	1.00	822	1,600	0.514	E-W(2):	0.868 *
	TH	2.00	2,118	3,200	0.662 *	V/C:	0.964
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	1.064
	LT	0.00	0	0	0.000	LOS:	F
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	503	3,200	0.157		
	LT	1.00	329	1,600	0.206 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	427	1,600	0.156	N-S(1):	0.245 *
	TH	0.00	0	0	0.000	N-S(2):	0.156
	LT	2.00	705	2,880	0.245 *	E-W(1):	0.338
Westbound	RT	1.00	349	1,600	0.218	E-W(2):	0.478 *
	TH	2.00	821	3,200	0.257 *	V/C:	0.723
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.823
	LT	0.00	0	0	0.000	LOS:	D
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	1,083	3,200	0.338		
	LT	1.00	354	1,600	0.221 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 7 - I-605 SB On-ramp & Live Oak Ave
Description: Future

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

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

OLA Movements :
 FF Movements: EBR,

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): 0.000 *
	LT	0.00	0	0	0.000 *	E-W(1): 0.530 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.505
	TH	2.00	1,616	3,200	0.505	V/C: 0.530
	LT	1.00	683	1,600	0.427 *	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	0.00	0	0	0.000 *	ICU: 0.630
	LT	0.00	0	0	0.000 *	LOS: B
Eastbound	RT	1.00	508	1,600	0.000	
	TH	2.00	331	3,200	0.103 *	
	LT	0.00	0	0	0.000	

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): 0.000 *
	TH	0.00	0	0	0.000 *	N-S(2): 0.000 *
	LT	0.00	0	0	0.000 *	E-W(1): 0.832 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.402
	TH	2.00	1,285	3,200	0.402	V/C: 0.832
	LT	1.00	716	1,600	0.448 *	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	0.00	0	0	0.000 *	ICU: 0.932
	LT	0.00	0	0	0.000 *	LOS: E
Eastbound	RT	1.00	1,440	1,600	0.000	
	TH	2.00	1,229	3,200	0.384 *	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 9 - I-605 SB Off-ramp & Arrow Hwy
Description: Future

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

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

OLA Movements :
 FF Movements: SBR,

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	852	1,600	0.000	N-S(1): 0.370 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	1.00	592	1,600	0.370 *	E-W(1): 0.167
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.631 *
	TH	2.00	2,018	3,200	0.631 *	V/C: 1.001
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	ICU: 1.101
	TH	3.00	803	4,800	0.167	
	LT	0.00	0	0	0.000 *	LOS: F

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	482	1,600	0.000	N-S(1): 0.279 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	1.00	446	1,600	0.279 *	E-W(1): 0.365 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.187
	TH	2.00	597	3,200	0.187	V/C: 0.644
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	ICU: 0.744
	TH	3.00	1,754	4,800	0.365 *	
	LT	0.00	0	0	0.000	LOS: C

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 10 - Buena Vista St & Huntington Dr
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	87	0	0.000	N-S(1): 0.174
	TH	2.00	259	3,200	0.108 *	N-S(2): 0.205 *
	LT	1.00	72	1,600	0.045	E-W(1): 0.210
Westbound	RT	1.00	133	1,600	0.061	E-W(2): 0.562 *
	TH	2.00	1,681	3,200	0.525 *	V/C: 0.767
	LT	1.00	163	1,600	0.102	Lost Time: 0.100
Northbound	RT	0.00	132	0	0.000	ITS: 0.000
	TH	2.00	280	3,200	0.129	ICU: 0.867
	LT	1.00	155	1,600	0.097 *	LOS: D
Eastbound	RT	1.00	130	1,600	0.033	
	TH	2.00	345	3,200	0.108	
	LT	1.00	59	1,600	0.037 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	92	0	0.000	N-S(1): 0.316 *
	TH	2.00	295	3,200	0.121	N-S(2): 0.249
	LT	1.00	180	1,600	0.113 *	E-W(1): 0.603 *
Westbound	RT	1.00	104	1,600	0.009	E-W(2): 0.283
	TH	2.00	662	3,200	0.207	V/C: 0.919
	LT	1.00	289	1,600	0.181 *	Lost Time: 0.100
Northbound	RT	0.00	306	0	0.000	ITS: 0.000
	TH	2.00	344	3,200	0.203 *	ICU: 1.019
	LT	1.00	205	1,600	0.128	LOS: F
Eastbound	RT	1.00	236	1,600	0.083	
	TH	2.00	1,349	3,200	0.422 *	
	LT	1.00	122	1,600	0.076	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 11 - Buena Vista St & Central Ave
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.237 *
	TH	2.00	524	3,200	0.171	N-S(2):	0.197
	LT	1.00	42	1,600	0.026 *	E-W(1):	0.309 *
Westbound	RT	1.00	320	1,600	0.187	E-W(2):	0.187
	TH	1.00	149	1,600	0.093	V/C:	0.546
	LT	1.00	423	1,600	0.264 *	Lost Time:	0.100
Northbound	RT	0.00	325	0	0.000	ITS:	0.000
	TH	2.00	349	3,200	0.211 *	ICU:	0.646
	LT	1.00	42	1,600	0.026	LOS:	B
Eastbound	RT	0.00	48	0	0.000		
	TH	1.00	24	1,600	0.045 *		
	LT	1.00	0	1,600	0.000		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	36	0	0.000	N-S(1):	0.304 *
	TH	2.00	729	3,200	0.239	N-S(2):	0.270
	LT	1.00	96	1,600	0.060 *	E-W(1):	0.350 *
Westbound	RT	1.00	335	1,600	0.179	E-W(2):	0.183
	TH	1.00	134	1,600	0.084	V/C:	0.654
	LT	1.00	306	1,600	0.191 *	Lost Time:	0.100
Northbound	RT	0.00	242	0	0.000	ITS:	0.000
	TH	2.00	539	3,200	0.244 *	ICU:	0.754
	LT	1.00	50	1,600	0.031	LOS:	C
Eastbound	RT	0.00	157	0	0.000		
	TH	1.00	97	1,600	0.159 *		
	LT	1.00	6	1,600	0.004		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 12 - Buena Vista St & I-210 WB On-ramp
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	288	0	0.000	N-S(1):	0.223
	TH	2.00	701	3,200	0.309 *	N-S(2):	0.406 *
	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 *	V/C:	0.406
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	715	3,200	0.223	ICU:	0.506
	LT	1.00	155	1,600	0.097 *	LOS:	A
Eastbound	RT	0.00	0	0	0.000		
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	354	0	0.000	N-S(1):	0.260
	TH	2.00	839	3,200	0.373 *	N-S(2):	0.617 *
	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 *	V/C:	0.617
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	831	3,200	0.260	ICU:	0.717
	LT	1.00	391	1,600	0.244 *	LOS:	C
Eastbound	RT	0.00	0	0	0.000		
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 13 - Buena Vista St & Evergreen St/I-210 EB On-ramp
Description: Future

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): 0.341 *
	TH	2.00	452	3,200	0.141	N-S(2): 0.141
	LT	1.00	264	1,600	0.165 *	E-W(1): 0.287 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.223
	TH	0.00	0	0	0.000	V/C: 0.628
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	1.00	282	1,600	0.176 *	ITS: 0.000
	TH	2.00	501	3,200	0.157	ICU: 0.728
	LT	0.00	0	0	0.000	LOS: C
Eastbound	RT	0.00	459	1,600	0.287 *	
	TH	2.00	13	1,600	0.231	
	LT	0.00	356	1,600	0.223	

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): 0.499 *
	TH	2.00	523	3,200	0.163	N-S(2): 0.163
	LT	1.00	296	1,600	0.185 *	E-W(1): 0.311 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.252
	TH	0.00	0	0	0.000	V/C: 0.810
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	1.00	502	1,600	0.314 *	ITS: 0.000
	TH	2.00	825	3,200	0.258	ICU: 0.910
	LT	0.00	0	0	0.000	LOS: E
Eastbound	RT	0.00	181	0	0.000	
	TH	2.00	411	1,600	0.311 *	
	LT	0.00	403	1,600	0.252	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 15 - Buena Vista St & Duarte Rd
Description: Future

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	122	0	0.000	N-S(1): 0.760 *
	TH	2.00	232	1,067	0.332	N-S(2): 0.000
	LT	0.00	558	1,067	0.523 *	E-W(1): 0.235
Westbound	RT	1.00	288	1,067	0.008	E-W(2): 0.308 *
	TH	2.00	378	3,200	0.118 *	V/C: 1.068
	LT	1.00	142	1,600	0.089	Lost Time: 0.100
Northbound	RT	0.00	199	0	0.000	ITS: 0.000
	TH	2.00	306	2,134	0.237 *	ICU: 1.168
	LT	1.00	168	1,600	0.105	LOS: F
Eastbound	RT	1.00	39	1,600	0.000	
	TH	2.00	467	3,200	0.146	
	LT	1.00	203	1,067	0.190 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	124	0	0.000	N-S(1): 0.600 *
	TH	2.00	303	1,067	0.307 *	N-S(2): 0.000
	LT	0.00	228	1,067	0.214	E-W(1): 0.270
Westbound	RT	1.00	661	1,067	0.513 *	E-W(2): 0.735 *
	TH	2.00	379	3,200	0.118	V/C: 1.335
	LT	1.00	181	1,600	0.113	Lost Time: 0.100
Northbound	RT	0.00	153	0	0.000	ITS: 0.000
	TH	2.00	473	2,134	0.293 *	ICU: 1.435
	LT	1.00	84	1,600	0.053	LOS: F
Eastbound	RT	1.00	112	1,600	0.044	
	TH	2.00	501	3,200	0.157	
	LT	1.00	237	1,067	0.222 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 21 - Hope Dr & Duarte Rd
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.029 *
	LT	0.00	0	0	0.000	E-W(1):	0.321 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.237
	TH	2.00	757	3,200	0.237	V/C:	0.350
	LT	1.00	49	1,600	0.031 *	Lost Time:	0.100
Northbound	RT	1.00	17	1,600	0.000	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.450
	LT	1.00	46	1,600	0.029 *	LOS:	A
Eastbound	RT	0.00	174	0	0.000		
	TH	2.00	753	3,200	0.290 *		
	LT	0.00	0	0	0.000		

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):	0.010
	TH	0.00	0	0	0.000 *	N-S(2):	0.109 *
	LT	0.00	0	0	0.000	E-W(1):	0.271 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.235
	TH	2.00	752	3,200	0.235	V/C:	0.380
	LT	1.00	12	1,600	0.008 *	Lost Time:	0.100
Northbound	RT	1.00	22	1,600	0.010	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.480
	LT	1.00	174	1,600	0.109 *	LOS:	A
Eastbound	RT	0.00	58	0	0.000		
	TH	2.00	782	3,200	0.263 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 23 - Highland Ave & Huntington Dr
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	44	1,600	0.018	N-S(1):	0.113
	TH	2.00	285	3,200	0.061 *	N-S(2):	0.140 *
	LT	0.00	64	1,600	0.040	E-W(1):	0.453
Westbound	RT	1.00	75	1,600	0.027	E-W(2):	0.579 *
	TH	2.00	1,792	3,200	0.560 *	V/C:	0.719
	LT	1.00	543	1,600	0.339	Lost Time:	0.100
Northbound	RT	1.00	220	1,600	0.000	ITS:	0.000
	TH	2.00	123	3,200	0.073	ICU:	0.819
	LT	0.00	127	1,600	0.079 *	LOS:	D
Eastbound	RT	1.00	123	1,600	0.037		
	TH	2.00	366	3,200	0.114		
	LT	1.00	31	1,600	0.019 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	56	1,600	0.024	N-S(1):	0.192 *
	TH	2.00	179	3,200	0.050	N-S(2):	0.144
	LT	0.00	83	1,600	0.052 *	E-W(1):	0.542 *
Westbound	RT	1.00	43	1,600	0.001	E-W(2):	0.282
	TH	2.00	829	3,200	0.259	V/C:	0.734
	LT	1.00	185	1,600	0.116 *	Lost Time:	0.100
Northbound	RT	1.00	316	1,600	0.140 *	ITS:	0.000
	TH	2.00	159	3,200	0.097	ICU:	0.834
	LT	0.00	150	1,600	0.094	LOS:	D
Eastbound	RT	1.00	206	1,600	0.082		
	TH	2.00	1,362	3,200	0.426 *		
	LT	1.00	36	1,600	0.023		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 24 - Highland Ave & Central Ave
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	124	1,600	0.058	N-S(1):	0.130
	TH	2.00	732	3,200	0.147 *	N-S(2):	0.210 *
	LT	0.00	84	1,600	0.053	E-W(1):	0.358
Westbound	RT	0.00	73	0	0.000	E-W(2):	0.537 *
	TH	1.00	316	1,600	0.498 *	V/C:	0.747
	LT	0.00	407	1,600	0.254	Lost Time:	0.100
Northbound	RT	1.00	145	1,600	0.000	ITS:	0.000
	TH	2.00	250	3,200	0.077	ICU:	0.847
	LT	0.00	100	1,600	0.063 *	LOS:	D
Eastbound	RT	1.00	190	1,600	0.088		
	TH	1.00	105	1,600	0.104		
	LT	0.00	62	1,600	0.039 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	79	1,600	0.020	N-S(1):	0.402 *
	TH	2.00	348	3,200	0.094	N-S(2):	0.138
	LT	0.00	176	1,600	0.110 *	E-W(1):	0.371 *
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.207
	TH	1.00	104	1,600	0.148	V/C:	0.773
	LT	0.00	103	1,600	0.064 *	Lost Time:	0.100
Northbound	RT	1.00	518	1,600	0.292 *	ITS:	0.000
	TH	2.00	547	3,200	0.178	ICU:	0.873
	LT	0.00	71	1,600	0.044	LOS:	D
Eastbound	RT	0.00	72	0	0.000		
	TH	1.00	325	1,600	0.307 *		
	LT	0.00	94	1,600	0.059		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 26 - Highland Ave & Business Center Dr
Description: Future

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

N-S Split Phase : N
 E-W Split Phase : Y
 Lost Time (% of cycle) : 10
 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	424	0	0.000	N-S(1):	0.137
	TH	2.00	801	3,200	0.383 *	N-S(2):	0.536 *
	LT	1.00	45	1,600	0.028	E-W(1):	0.127 *
Westbound	RT	0.00	14	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.009 *	V/C:	0.663
	LT	1.00	13	1,600	0.008	Lost Time:	0.100
Northbound	RT	0.00	38	0	0.000	ITS:	0.000
	TH	2.00	310	3,200	0.109	ICU:	0.763
	LT	1.00	245	1,600	0.153 *	LOS:	C
Eastbound	RT	0.00	189	0	0.000		
	TH	1.00	0	1,600	0.118 *		
	LT	1.00	116	1,600	0.073		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	268	1,600	0.168 *	N-S(1):	0.252
	TH	2.00	262	1,600	0.164	N-S(2):	0.282 *
	LT	1.00	20	1,600	0.013	E-W(1):	0.217 *
Westbound	RT	0.00	25	0	0.000	E-W(2):	0.000
	TH	1.00	0	1,600	0.016	V/C:	0.499
	LT	1.00	44	1,600	0.028 *	Lost Time:	0.100
Northbound	RT	0.00	27	0	0.000	ITS:	0.000
	TH	2.00	738	3,200	0.239	ICU:	0.599
	LT	1.00	182	1,600	0.114 *	LOS:	A
Eastbound	RT	0.00	301	0	0.000		
	TH	1.00	1	1,600	0.189 *		
	LT	1.00	245	1,600	0.153		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 27 - I-605/Mt Olive Dr & Huntington Dr
Description: Future

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

N-S Split Phase : Y
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.563 *
	TH	2.00	333	3,200	0.136 *	N-S(2):	0.000
	LT	1.00	60	1,600	0.038	E-W(1):	0.362
Westbound	RT	1.00	136	1,600	0.066	E-W(2):	0.470 *
	TH	2.00	1,372	3,200	0.429 *	V/C:	1.033
	LT	1.00	424	1,600	0.265	Lost Time:	0.100
Northbound	RT	1.00	312	1,600	0.063	ITS:	0.000
	TH	0.25	155	404	0.384	ICU:	1.133
	LT	1.75	1,074	2,517	0.427 *	LOS:	F
Eastbound	RT	1.00	357	1,600	0.010		
	TH	2.00	311	3,200	0.097		
	LT	1.00	66	1,600	0.041 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	60	0	0.000	N-S(1):	0.495 *
	TH	2.00	323	3,200	0.120 *	N-S(2):	0.000
	LT	1.00	86	1,600	0.054	E-W(1):	0.592 *
Westbound	RT	1.00	40	1,600	0.000	E-W(2):	0.224
	TH	2.00	610	3,200	0.191	V/C:	1.087
	LT	1.00	289	1,600	0.181 *	Lost Time:	0.100
Northbound	RT	1.00	745	1,600	0.375 *	ITS:	0.000
	TH	0.64	224	1,018	0.220	ICU:	1.187
	LT	1.36	480	1,964	0.244	LOS:	F
Eastbound	RT	1.00	853	1,600	0.411 *		
	TH	2.00	974	3,200	0.304		
	LT	1.00	53	1,600	0.033		

* - Denotes critical movement

HCM

HCM 2010 Signalized Intersection Summary
 3: Evergreen St & Mountain Ave

Duarte City of Hope
 Future No Project AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	296	310	202	0	0	0	0	404	157	329	457	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	318	333	217				0	434	169	354	491	0
Adj No. of Lanes	1	2	1				0	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	426	851	381				0	1520	586	563	2153	0
Arrive On Green	0.24	0.24	0.24				0.00	0.61	0.61	0.61	0.61	0.00
Sat Flow, veh/h	1774	3539	1583				0	2592	964	813	3632	0
Grp Volume(v), veh/h	318	333	217				0	306	297	354	491	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1770	1693	813	1770	0
Q Serve(g_s), s	8.8	4.2	6.4				0.0	4.3	4.4	19.4	3.3	0.0
Cycle Q Clear(g_c), s	8.8	4.2	6.4				0.0	4.3	4.4	23.8	3.3	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	426	851	381				0	1076	1030	563	2153	0
V/C Ratio(X)	0.75	0.39	0.57				0.00	0.28	0.29	0.63	0.23	0.00
Avail Cap(c_a), veh/h	537	1071	479				0	1205	1153	622	2411	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.6	16.8	17.7				0.0	4.9	4.9	10.6	4.7	0.0
Incr Delay (d2), s/veh	4.3	0.3	1.3				0.0	0.1	0.2	1.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	4.7	2.1	2.9				0.0	2.1	2.1	4.5	1.6	0.0
LnGrp Delay(d),s/veh	22.9	17.1	19.0				0.0	5.0	5.1	12.3	4.8	0.0
LnGrp LOS	C	B	B					A	A	B	A	
Approach Vol, veh/h		868						603			845	
Approach Delay, s/veh		19.7						5.1			7.9	
Approach LOS		B						A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		36.1		16.7		36.1						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		36.0		16.0		36.0						
Max Q Clear Time (g_c+I1), s		6.4		10.8		25.8						
Green Ext Time (p_c), s		11.9		1.9		6.4						
Intersection Summary												
HCM 2010 Ctrl Delay			11.6									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	165.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	368	0	0	1500	0	0	0	775	0	0	729
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	400	0	0	1630	0	0	0	842	0	0	792

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1630	0	0	400	0	0	1215	2030	200	1830	2030	815
Stage 1	-	-	-	-	-	-	400	400	-	1630	1630	-
Stage 2	-	-	-	-	-	-	815	1630	-	200	400	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	394	-	-	1155	-	-	137	57 ~ 808	-	48	57 ~ 321	-
Stage 1	-	-	-	-	-	-	597	600	-	106	158	-
Stage 2	-	-	-	-	-	-	338	158	-	783	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	394	-	-	1155	-	-	-	57 ~ 808	-	-	57 ~ 321	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	57	-	-	57	-
Stage 1	-	-	-	-	-	-	597	600	-	106	158	-
Stage 2	-	-	-	-	-	-	-	158	-	-	600	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	65.7	\$ 695.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	808	394	-	-	1155	-	-	321
HCM Lane V/C Ratio	1.043	-	-	-	-	-	-	2.469
HCM Control Delay (s)	65.7	0	-	-	0	-	-	\$ 695.4
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	20.1	0	-	-	0	-	-	63.6

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

HCM 2010 Signalized Intersection Summary
 9: Arrow Hwy & I-605 SB Off-Ramp

Duarte City of Hope
 Future No Project AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑		↵	↶		
Volume (veh/h)	0	803	2018	0	592	852		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863		
Adj Flow Rate, veh/h	0	836	2102	0	617	0		
Adj No. of Lanes	0	3	2	0	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	0	2	2	0	2	2		
Cap, veh/h	0	2668	1857	0	652	582		
Arrive On Green	0.00	0.52	0.52	0.00	0.37	0.00		
Sat Flow, veh/h	0	5421	3725	0	1774	1583		
Grp Volume(v), veh/h	0	836	2102	0	617	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	0	1774	1583		
Q Serve(g_s), s	0.0	7.0	39.0	0.0	25.1	0.0		
Cycle Q Clear(g_c), s	0.0	7.0	39.0	0.0	25.1	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2668	1857	0	652	582		
V/C Ratio(X)	0.00	0.31	1.13	0.00	0.95	0.00		
Avail Cap(c_a), veh/h	0	2668	1857	0	668	596		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	10.0	17.7	0.0	22.8	0.0		
Incr Delay (d2), s/veh	0.0	0.1	66.8	0.0	22.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(-26165%),veh/ln	0.0	3.3	36.0	0.0	16.2	0.0		
LnGrp Delay(d),s/veh	0.0	10.1	84.4	0.0	45.0	0.0		
LnGrp LOS		B	F		D			
Approach Vol, veh/h		836	2102		617			
Approach Delay, s/veh		10.1	84.4		45.0			
Approach LOS		B	F		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				43.0		31.3		43.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				39.0		28.0		39.0
Max Q Clear Time (g_c+I1), s				9.0		27.1		41.0
Green Ext Time (p_c), s				26.7		0.3		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			60.1					
HCM 2010 LOS			E					

HCM 2010 Signalized Intersection Summary
 13: Evergreen St & Buena Vista St

Duarte City of Hope
 Future No Project AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔						↑↑	↗	↘	↑↑	
Volume (veh/h)	356	13	459	0	0	0	0	501	282	264	452	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	429	16	553				0	604	340	318	545	0
Adj No. of Lanes	0	2	0				0	2	1	1	2	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	514	19	475				0	2006	897	402	2006	0
Arrive On Green	0.30	0.30	0.30				0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	1713	64	1583				0	3632	1583	591	3632	0
Grp Volume(v), veh/h	445	0	553				0	604	340	318	545	0
Grp Sat Flow(s),veh/h/ln	1777	0	1583				0	1770	1583	591	1770	0
Q Serve(g_s), s	14.0	0.0	18.0				0.0	5.4	7.1	28.6	4.7	0.0
Cycle Q Clear(g_c), s	14.0	0.0	18.0				0.0	5.4	7.1	34.0	4.7	0.0
Prop In Lane	0.96		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	533	0	475				0	2006	897	402	2006	0
V/C Ratio(X)	0.83	0.00	1.16				0.00	0.30	0.38	0.79	0.27	0.00
Avail Cap(c_a), veh/h	533	0	475				0	2006	897	402	2006	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.6	0.0	21.0				0.0	6.8	7.2	17.3	6.7	0.0
Incr Delay (d2), s/veh	11.0	0.0	94.8				0.0	0.1	0.3	10.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.0	0.0	20.3				0.0	2.6	3.1	6.4	2.3	0.0
LnGrp Delay(d),s/veh	30.6	0.0	115.8				0.0	6.9	7.4	27.5	6.7	0.0
LnGrp LOS	C		F					A	A	C	A	
Approach Vol, veh/h		998						944			863	
Approach Delay, s/veh		77.8						7.1			14.4	
Approach LOS		E						A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		22.0		38.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		34.0		18.0		34.0						
Max Q Clear Time (g_c+I1), s		9.1		20.0		36.0						
Green Ext Time (p_c), s		14.4		0.0		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			34.5									
HCM 2010 LOS			C									

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	1	13	14	1	45	10	724	57	9	861	19
Conflicting Peds, #/hr	0	0	1	0	0	1	4	0	5	5	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	1	14	15	1	49	11	787	62	10	936	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1384	1839	484	1330	1818	430	958	0	0	850	0	0
Stage 1	967	967	-	841	841	-	-	-	-	-	-	-
Stage 2	417	872	-	489	977	-	-	-	-	-	-	-
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	103	75	529	113	77	573	714	-	-	784	-	-
Stage 1	273	331	-	326	379	-	-	-	-	-	-	-
Stage 2	584	366	-	529	327	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	89	71	526	104	73	570	711	-	-	781	-	-
Mov Cap-2 Maneuver	89	71	-	104	73	-	-	-	-	-	-	-
Stage 1	265	322	-	316	367	-	-	-	-	-	-	-
Stage 2	514	355	-	497	318	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.1	23.1	0.2	0.2
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	711	-	-	200	264	781	-
HCM Lane V/C Ratio	0.015	-	-	0.103	0.247	0.013	-
HCM Control Delay (s)	10.1	0.1	-	25.1	23.1	9.7	0.1
HCM Lane LOS	B	A	-	D	C	A	A
HCM 95th %tile Q(veh)	0	-	-	0.3	0.9	0	-

Intersection

Int Delay, s/veh 1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	21	12	469	294	82	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	230	-
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	23	13	510	320	89	253

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	975	415	0	0	829	0
Stage 1	670	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	249	586	-	-	798	-
Stage 1	470	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	221	586	-	-	798	-
Mov Cap-2 Maneuver	221	-	-	-	-	-
Stage 1	470	-	-	-	-	-
Stage 2	641	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	2.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	221	586	798	-
HCM Lane V/C Ratio	-	-	0.103	0.022	0.112	-
HCM Control Delay (s)	-	-	23.2	11.3	10.1	-
HCM Lane LOS	-	-	C	B	B	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	0.4	-

Intersection													
Int Delay, s/veh	92.4												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	389	0	0	555	4	329	0	202	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									
Storage Length	-	-	-	-	-	-	0	-	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	8	423	0	0	603	4	358	0	220	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	608	0	0	423	0	0	1047	1046	423	1043	1043	605
Stage 1	-	-	-	-	-	-	438	438	-	605	605	-
Stage 2	-	-	-	-	-	-	609	608	-	438	438	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	970	-	-	1136	-	-	~ 206	228	631	207	229	498
Stage 1	-	-	-	-	-	-	597	579	-	485	487	-
Stage 2	-	-	-	-	-	-	482	486	-	597	579	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	1136	-	-	~ 201	225	631	134	226	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 201	225	-	134	226	-
Stage 1	-	-	-	-	-	-	590	573	-	480	487	-
Stage 2	-	-	-	-	-	-	475	486	-	385	573	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	259.6	12.3
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	631	970	-	-	1136	-	-	498
HCM Lane V/C Ratio	1.779	0.348	0.008	-	-	-	-	-	0.015
HCM Control Delay (s)	\$ 410.5	13.7	8.7	0	-	0	-	-	12.3
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	25	1.6	0	-	-	0	-	-	0

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

Intersection

Int Delay, s/veh 1.2

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	51	1142	9	4	746	20	11
Conflicting Peds, #/hr	0	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	0	-	-	113	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	55	1241	10	4	811	22	12

Major/Minor	Major1	Major2	Minor1				
Conflicting Flow All	592	0	0	1251	0	1771	629
Stage 1	-	-	-	-	-	1357	-
Stage 2	-	-	-	-	-	414	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	605	-	-	552	-	74	425
Stage 1	-	-	-	-	-	204	-
Stage 2	-	-	-	-	-	635	-
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	605	-	-	551	-	73	424
Mov Cap-2 Maneuver	-	-	-	-	-	73	-
Stage 1	-	-	-	-	-	204	-
Stage 2	-	-	-	-	-	629	-

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.1	56.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	103	605	-	-	551	-
HCM Lane V/C Ratio	0.327	0.092	-	-	0.008	-
HCM Control Delay (s)	56.1	11.6	-	-	11.6	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	1.3	0.3	-	-	0	-

Intersection

Int Delay, s/veh 6.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	930	225	107	701	55	7
Conflicting Peds, #/hr	0	2	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	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	1011	245	116	762	60	8

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1747
Stage 1	-	-	1133
Stage 2	-	-	614
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	550	77
Stage 1	-	-	269
Stage 2	-	-	502
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	550	61
Mov Cap-2 Maneuver	-	-	61
Stage 1	-	-	269
Stage 2	-	-	395

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	197.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	61	425	-	-	550	-
HCM Lane V/C Ratio	0.98	0.018	-	-	0.211	-
HCM Control Delay (s)	220.9	13.6	-	-	13.3	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	4.7	0.1	-	-	0.8	-

Intersection

Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	8	17	3	0	83	4	21	0	6	17	20
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	0	9	18	3	0	90	4	23	0	7	18	22
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.6	8.1	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	29%	77%	76%
Vol Thru, %	40%	61%	4%	21%
Vol Right, %	47%	11%	19%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	43	28	108	115
LT Vol	6	8	83	87
Through Vol	17	17	4	24
RT Vol	20	3	21	4
Lane Flow Rate	47	30	117	125
Geometry Grp	1	1	1	1
Degree of Util (X)	0.054	0.038	0.143	0.151
Departure Headway (Hd)	4.163	4.449	4.398	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	864	808	819	807
Service Time	2.171	2.456	2.403	2.466
HCM Lane V/C Ratio	0.054	0.037	0.143	0.155
HCM Control Delay	7.4	7.6	8.1	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.5	0.5

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	87	24	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	95	26	4
Number of Lanes	0	0	1	0

Approach SB

Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection

Int Delay, s/veh 1.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1	678	94	226	798	6	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	105	-	-	105	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1	737	102	246	867	7	18

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	633	0	0	839	0	1715	420
Stage 1	-	-	-	-	-	790	-
Stage 2	-	-	-	-	-	925	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	570	-	-	791	-	81	582
Stage 1	-	-	-	-	-	408	-
Stage 2	-	-	-	-	-	347	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	570	-	-	791	-	56	582
Mov Cap-2 Maneuver	-	-	-	-	-	56	-
Stage 1	-	-	-	-	-	408	-
Stage 2	-	-	-	-	-	239	-

Approach	EB		WB		NB
HCM Control Delay, s	0		2.6		30
HCM LOS					D

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	169	570	-	-	791	-
HCM Lane V/C Ratio	0.148	0.002	-	-	0.311	-
HCM Control Delay (s)	30	11.3	-	-	11.6	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	0.5	0	-	-	1.3	-

Intersection

Int Delay, s/veh 27.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	42	4	48	1	1	17	8	427	7	96	1238	35
Conflicting Peds, #/hr	0	0	0	0	0	1	5	0	2	1	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	46	4	52	1	1	18	9	464	8	104	1346	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1824	2063	697	1370	2078	242	1384	0	0	473	0	0
Stage 1	1573	1573	-	486	486	-	-	-	-	-	-	-
Stage 2	251	490	-	884	1592	-	-	-	-	-	-	-
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	48	54	383	105	53	759	491	-	-	1085	-	-
Stage 1	115	169	-	531	549	-	-	-	-	-	-	-
Stage 2	731	547	-	307	165	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 30	30	381	53	30	755	489	-	-	1080	-	-
Mov Cap-2 Maneuver	~ 30	30	-	53	30	-	-	-	-	-	-	-
Stage 1	112	97	-	517	535	-	-	-	-	-	-	-
Stage 2	691	533	-	145	95	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 534.1	20.4	0.4	2.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	489	-	-	57	254	1080	-	-
HCM Lane V/C Ratio	0.018	-	-	1.793	0.081	0.097	-	-
HCM Control Delay (s)	12.5	0.2	-	\$ 534.1	20.4	8.7	1.6	-
HCM Lane LOS	B	A	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	9.6	0.3	0.3	-	-

Notes

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

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	1	0	0	1	1	1	1	1	0
Stage 1	-	-	-	-	-	-	1	1	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	1	1	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1622	-	-	1022	895	1084	1022	895	-
Stage 1	-	-	-	-	-	-	1022	895	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	895	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1622	-	-	-	894	1083	1022	894	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	894	-	1022	894	-
Stage 1	-	-	-	-	-	-	1021	894	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	894	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	0	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	4.14	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

HCM 2010 Signalized Intersection Summary
 3: Evergreen St & Mountain Ave

Duarte City of Hope
 Future No Project PM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	228	1191	152	0	0	0	0	512	197	447	588	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	245	1281	163				0	551	212	481	632	0
Adj No. of Lanes	1	2	1				0	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	532	1062	475				0	1418	544	431	2006	0
Arrive On Green	0.30	0.30	0.30				0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	1774	3539	1583				0	2596	960	701	3632	0
Grp Volume(v), veh/h	245	1281	163				0	389	374	481	632	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1770	1693	701	1770	0
Q Serve(g_s), s	6.7	18.0	4.8				0.0	7.3	7.4	26.6	5.7	0.0
Cycle Q Clear(g_c), s	6.7	18.0	4.8				0.0	7.3	7.4	34.0	5.7	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	532	1062	475				0	1003	960	431	2006	0
V/C Ratio(X)	0.46	1.21	0.34				0.00	0.39	0.39	1.12	0.32	0.00
Avail Cap(c_a), veh/h	532	1062	475				0	1003	960	431	2006	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	21.0	16.4				0.0	7.2	7.2	20.4	6.9	0.0
Incr Delay (d2), s/veh	0.6	101.9	0.4				0.0	0.2	0.3	78.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	3.4	23.7	2.1				0.0	3.6	3.5	16.5	2.7	0.0
LnGrp Delay(d),s/veh	17.7	122.9	16.8				0.0	7.5	7.5	99.2	6.9	0.0
LnGrp LOS	B	F	B					A	A	F	A	
Approach Vol, veh/h		1689						763			1113	
Approach Delay, s/veh		97.4						7.5			46.8	
Approach LOS		F						A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		22.0		38.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		34.0		18.0		34.0						
Max Q Clear Time (g_c+I1), s		9.4		20.0		36.0						
Green Ext Time (p_c), s		15.6		0.0		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			62.4									
HCM 2010 LOS			E									

Intersection													
Int Delay, s/veh	169.6												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1310	0	0	1201	0	0	0	675	0	0	748
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1424	0	0	1305	0	0	0	734	0	0	813

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1305	0	0	1424	0	0	2077	2729	712	2017	2729	653
Stage 1	-	-	-	-	-	-	1424	1424	-	1305	1305	-
Stage 2	-	-	-	-	-	-	653	1305	-	712	1424	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	526	-	-	474	-	-	31	20	~ 375	34	20	~ 410
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	423	228	-	389	200	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	526	-	-	474	-	-	-	20	~ 375	-	20	~ 410
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	20	-	-	20	-
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	-	228	-	-	200	-

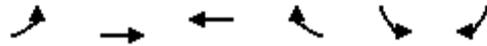
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	\$ 463.8	\$ 473.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	526	-	-	474	-	-	410
HCM Lane V/C Ratio	1.957	-	-	-	-	-	-	1.983
HCM Control Delay (s)	\$ 463.8	0	-	-	0	-	-	\$ 473.2
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	50.3	0	-	-	0	-	-	55.8

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

HCM 2010 Signalized Intersection Summary
 9: Arrow Hwy & I-605 SB Off-Ramp

Duarte City of Hope
 Future No Project PM



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑		↑	↑		
Volume (veh/h)	0	1754	597	0	446	482		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863		
Adj Flow Rate, veh/h	0	1827	622	0	465	0		
Adj No. of Lanes	0	3	2	0	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	0	2	2	0	2	2		
Cap, veh/h	0	2292	1595	0	570	509		
Arrive On Green	0.00	0.45	0.45	0.00	0.32	0.00		
Sat Flow, veh/h	0	5421	3725	0	1774	1583		
Grp Volume(v), veh/h	0	1827	622	0	465	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	0	1774	1583		
Q Serve(g_s), s	0.0	10.8	4.1	0.0	8.5	0.0		
Cycle Q Clear(g_c), s	0.0	10.8	4.1	0.0	8.5	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2292	1595	0	570	509		
V/C Ratio(X)	0.00	0.80	0.39	0.00	0.82	0.00		
Avail Cap(c_a), veh/h	0	2320	1614	0	809	722		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	8.3	6.4	0.0	10.9	0.0		
Incr Delay (d2), s/veh	0.0	2.0	0.2	0.0	4.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(-26165%),veh/ln	0.0	5.3	2.0	0.0	4.8	0.0		
LnGrp Delay(d),s/veh	0.0	10.3	6.6	0.0	15.4	0.0		
LnGrp LOS		B	A		B			
Approach Vol, veh/h		1827	622		465			
Approach Delay, s/veh		10.3	6.6		15.4			
Approach LOS		B	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				19.8		15.3		19.8
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				16.0		16.0		16.0
Max Q Clear Time (g_c+I1), s				12.8		10.5		6.1
Green Ext Time (p_c), s				3.0		0.8		8.8
Intersection Summary								
HCM 2010 Ctrl Delay			10.3					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 13: Evergreen St & Buena Vista St

Duarte City of Hope
 Future No Project PM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↑↑	↗	↘	↑↑	
Volume (veh/h)	403	411	181	0	0	0	0	825	502	296	523	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	486	495	218				0	994	605	357	630	0
Adj No. of Lanes	0	2	0				0	2	1	1	2	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	389	423	191				0	2065	924	253	2065	0
Arrive On Green	0.28	0.28	0.28				0.00	0.58	0.58	0.58	0.58	0.00
Sat Flow, veh/h	1371	1491	675				0	3632	1583	317	3632	0
Grp Volume(v), veh/h	636	0	563				0	994	605	357	630	0
Grp Sat Flow(s),veh/h/ln	1794	0	1744				0	1770	1583	317	1770	0
Q Serve(g_s), s	17.0	0.0	17.0				0.0	9.8	15.5	25.2	5.4	0.0
Cycle Q Clear(g_c), s	17.0	0.0	17.0				0.0	9.8	15.5	35.0	5.4	0.0
Prop In Lane	0.76		0.39				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	508	0	494				0	2065	924	253	2065	0
V/C Ratio(X)	1.25	0.00	1.14				0.00	0.48	0.66	1.41	0.31	0.00
Avail Cap(c_a), veh/h	508	0	494				0	2065	924	253	2065	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.5	0.0	21.5				0.0	7.2	8.4	23.4	6.3	0.0
Incr Delay (d2), s/veh	128.4	0.0	85.0				0.0	0.2	1.7	206.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%)265ln	0.0	0.0	19.8				0.0	4.7	7.0	18.7	2.6	0.0
LnGrp Delay(d),s/veh	149.9	0.0	106.5				0.0	7.4	10.1	229.6	6.4	0.0
LnGrp LOS	F		F					A	B	F	A	
Approach Vol, veh/h		1199						1599			987	
Approach Delay, s/veh		129.5						8.4			87.1	
Approach LOS		F						A			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		39.0		21.0		39.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		35.0		17.0		35.0						
Max Q Clear Time (g_c+I1), s		17.5		19.0		37.0						
Green Ext Time (p_c), s		15.8		0.0		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			67.3									
HCM 2010 LOS			E									

Intersection

Int Delay, s/veh 3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	4	17	14	1	46	14	1278	24	32	570	25
Conflicting Peds, #/hr	0	0	1	0	0	1	4	0	5	5	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	4	4	18	15	1	50	15	1389	26	35	620	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1431	2151	329	1817	2151	714	648	0	0	1416	0	0
Stage 1	704	704	-	1434	1434	-	-	-	-	-	-	-
Stage 2	727	1447	-	383	717	-	-	-	-	-	-	-
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	95	48	667	49	48	374	934	-	-	477	-	-
Stage 1	394	438	-	141	198	-	-	-	-	-	-	-
Stage 2	381	195	-	611	432	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	69	39	664	37	39	372	930	-	-	475	-	-
Mov Cap-2 Maneuver	69	39	-	37	39	-	-	-	-	-	-	-
Stage 1	364	387	-	130	183	-	-	-	-	-	-	-
Stage 2	302	180	-	517	382	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.6	71.1	0.4	1.3
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	930	-	-	134	116	475	-
HCM Lane V/C Ratio	0.016	-	-	0.203	0.572	0.073	-
HCM Control Delay (s)	8.9	0.3	-	38.6	71.1	13.2	0.7
HCM Lane LOS	A	A	-	E	F	B	A
HCM 95th %tile Q(veh)	0.1	-	-	0.7	2.8	0.2	-

Intersection

Int Delay, s/veh 6.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	183	147	516	23	11	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	230	-
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	199	160	561	25	12	543

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	869	293	0 0 586 0
Stage 1	573	-	- - - -
Stage 2	296	-	- - - -
Critical Hdwy	6.84	6.94	- - 4.14 -
Critical Hdwy Stg 1	5.84	-	- - - -
Critical Hdwy Stg 2	5.84	-	- - - -
Follow-up Hdwy	3.52	3.32	- - 2.22 -
Pot Cap-1 Maneuver	291	703	- - 985 -
Stage 1	527	-	- - - -
Stage 2	729	-	- - - -
Platoon blocked, %			- - - -
Mov Cap-1 Maneuver	287	703	- - 985 -
Mov Cap-2 Maneuver	287	-	- - - -
Stage 1	527	-	- - - -
Stage 2	720	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	28.3	0	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	287	703	985	-
HCM Lane V/C Ratio	-	-	0.693	0.227	0.012	-
HCM Control Delay (s)	-	-	41.7	11.6	8.7	-
HCM Lane LOS	-	-	E	B	A	-
HCM 95th %tile Q(veh)	-	-	4.7	0.9	0	-

Intersection												
Int Delay, s/veh	104.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	429	0	0	347	4	396	0	203	2	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									
Storage Length	-	-	-	-	-	-	0	-	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	13	466	0	0	377	4	430	0	221	2	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	382	0	0	466	0	0	884	874	466	871	871	379
Stage 1	-	-	-	-	-	-	492	492	-	379	379	-
Stage 2	-	-	-	-	-	-	392	382	-	492	492	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1176	-	-	1095	-	-	~ 266	288	597	271	289	668
Stage 1	-	-	-	-	-	-	558	548	-	643	615	-
Stage 2	-	-	-	-	-	-	633	613	-	558	548	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1176	-	-	1095	-	-	~ 253	284	597	169	285	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 253	284	-	169	285	-
Stage 1	-	-	-	-	-	-	550	540	-	633	615	-
Stage 2	-	-	-	-	-	-	609	613	-	346	540	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	247	12
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	597	1176	-	-	1095	-	-	540
HCM Lane V/C Ratio	1.701	0.37	0.011	-	-	-	-	-	0.05
HCM Control Delay (s)	\$ 366.2	14.5	8.1	0	-	0	-	-	12
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	28	1.7	0	-	-	0	-	-	0.2

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

Intersection

Int Delay, s/veh 0.9

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	55	794	12	14	1154	14	4
Conflicting Peds, #/hr	0	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	0	-	-	113	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	60	863	13	15	1254	15	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	916	0	0	876	0	1647	441
Stage 1	-	-	-	-	-	989	-
Stage 2	-	-	-	-	-	658	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	376	-	-	766	-	90	564
Stage 1	-	-	-	-	-	321	-
Stage 2	-	-	-	-	-	477	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	376	-	-	764	-	88	563
Mov Cap-2 Maneuver	-	-	-	-	-	88	-
Stage 1	-	-	-	-	-	321	-
Stage 2	-	-	-	-	-	466	-

Approach	EB		WB		NB
HCM Control Delay, s	1		0.1		45.6
HCM LOS					E

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	108	376	-	-	764	-
HCM Lane V/C Ratio	0.181	0.159	-	-	0.02	-
HCM Control Delay (s)	45.6	16.4	-	-	9.8	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.6	-	-	0.1	-

Intersection

Int Delay, s/veh 53.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	726	70	13	909	236	109
Conflicting Peds, #/hr	0	2	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	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	789	76	14	988	257	118

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	865
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	774
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	773
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	\$ 319.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	139	570	-	-	773	-
HCM Lane V/C Ratio	1.845	0.208	-	-	0.018	-
HCM Control Delay (s)	\$ 461.3	13	-	-	9.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	19.6	0.8	-	-	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	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	34	23	1	0	3	19	33	0	7	12	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	25	1	0	3	21	36	0	8	13	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.8	7.3	7.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	59%	5%	58%
Vol Thru, %	60%	40%	35%	12%
Vol Right, %	5%	2%	60%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	58	55	127
LT Vol	7	34	3	74
Through Vol	12	23	19	15
RT Vol	1	1	33	38
Lane Flow Rate	22	63	60	138
Geometry Grp	1	1	1	1
Degree of Util (X)	0.026	0.076	0.065	0.157
Departure Headway (Hd)	4.294	4.366	3.911	4.099
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	821	809	899	866
Service Time	2.388	2.457	2.009	2.167
HCM Lane V/C Ratio	0.027	0.078	0.067	0.159
HCM Control Delay	7.5	7.8	7.3	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.2	0.6

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	74	15	38
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	80	16	41
Number of Lanes	0	0	1	0

Approach SB

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

Lane

Intersection

Int Delay, s/veh 15.7

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	7	801	9	25	660	97	165
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	105	-	-	105	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	8	871	10	27	717	105	179

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	524	0	0	880	0	1304	440
Stage 1	-	-	-	-	-	891	-
Stage 2	-	-	-	-	-	413	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	668	-	-	764	-	152	565
Stage 1	-	-	-	-	-	361	-
Stage 2	-	-	-	-	-	636	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	668	-	-	764	-	147	565
Mov Cap-2 Maneuver	-	-	-	-	-	147	-
Stage 1	-	-	-	-	-	361	-
Stage 2	-	-	-	-	-	614	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.4	104.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	275	668	-	-	764	-
HCM Lane V/C Ratio	1.036	0.011	-	-	0.036	-
HCM Control Delay (s)	104.6	10.5	-	-	9.9	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	11	0	-	-	0.1	-

Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	62	4	3	103	4	1009	9	21	485	18
Conflicting Peds, #/hr	0	0	0	0	0	1	5	0	2	1	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	23	0	67	4	3	112	4	1097	10	23	527	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1143	1699	278	1420	1703	559	547	0	0	1108	0	0
Stage 1	583	583	-	1111	1111	-	-	-	-	-	-	-
Stage 2	560	1116	-	309	592	-	-	-	-	-	-	-
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	155	91	719	97	91	472	1018	-	-	626	-	-
Stage 1	465	497	-	223	283	-	-	-	-	-	-	-
Stage 2	480	281	-	676	492	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	109	85	716	83	85	470	1014	-	-	623	-	-
Mov Cap-2 Maneuver	109	85	-	83	85	-	-	-	-	-	-	-
Stage 1	460	471	-	221	280	-	-	-	-	-	-	-
Stage 2	356	278	-	578	466	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.3	19.7	0	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1014	-	-	297	363	623	-	-
HCM Lane V/C Ratio	0.004	-	-	0.304	0.329	0.037	-	-
HCM Control Delay (s)	8.6	0	-	22.3	19.7	11	0.3	-
HCM Lane LOS	A	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1.2	1.4	0.1	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	0	-	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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	1	0	0	1	1	1	1	1	0
Stage 1	-	-	-	-	-	-	1	1	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	1	1	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1622	-	-	1022	895	1084	1022	895	-
Stage 1	-	-	-	-	-	-	1022	895	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	895	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1622	-	-	-	894	1083	1022	894	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	894	-	1022	894	-
Stage 1	-	-	-	-	-	-	1021	894	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	894	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	0	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	4.14	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Future Plus Project

ICU

Project Title: Duarte City of Hope
Intersection: 1 - Live Oak Ave & Arrow Hwy
Description: Future Plus Project

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

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

OLA Movements :
 FF Movements: NBR, EBR,

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): 0.430 *
	LT	0.00	0	0	0.000	E-W(1): 0.278
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.628 *
	TH	2.00	2,011	3,200	0.628 *	V/C: 1.058
	LT	2.00	268	2,880	0.093	Lost Time: 0.100
Northbound	RT	1.00	322	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	1,238	2,880	0.430 *	ICU: 1.158
Eastbound	RT	1.00	702	1,600	0.000	
	TH	2.00	592	3,200	0.185	
	LT	0.00	0	0	0.000 *	LOS: F

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): 0.000
	TH	0.00	0	0	0.000 *	N-S(2): 0.316 *
	LT	0.00	0	0	0.000	E-W(1): 0.507 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.231
	TH	2.00	739	3,200	0.231	V/C: 0.823
	LT	2.00	515	2,880	0.179 *	Lost Time: 0.100
Northbound	RT	1.00	331	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	909	2,880	0.316 *	ICU: 0.923
Eastbound	RT	1.00	2,341	1,600	0.000	
	TH	2.00	1,051	3,200	0.328 *	
	LT	0.00	0	0	0.000	LOS: E

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 2 - Mountain Ave & Central Ave
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	154	0	0.000	N-S(1): 0.163 N-S(2): 0.346 * E-W(1): 0.159 E-W(2): 0.355 *
	TH	2.00	557	3,200	0.222 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	397	0	0.000	V/C: 0.701 Lost Time: 0.100 ITS: 0.000
	TH	2.00	739	3,200	0.355 *	
	LT	1.00	254	1,600	0.159	
Northbound	RT	0.00	0	0	0.000	ICU: 0.801
	TH	2.00	520	3,200	0.163	
	LT	1.00	199	1,600	0.124 *	
Eastbound	RT	0.00	0	0	0.000	LOS: D
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	226	0	0.000	N-S(1): 0.173 N-S(2): 0.454 * E-W(1): 0.131 E-W(2): 0.204 *
	TH	2.00	822	3,200	0.328 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	327	1,600	0.204 *	V/C: 0.658 Lost Time: 0.100 ITS: 0.000
	TH	2.00	245	1,600	0.153	
	LT	1.00	209	1,600	0.131	
Northbound	RT	0.00	0	0	0.000	ICU: 0.758
	TH	2.00	554	3,200	0.173	
	LT	1.00	202	1,600	0.126 *	
Eastbound	RT	0.00	0	0	0.000	LOS: C
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 3 - Mountain Ave & Evergreen Ave
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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): 0.382 * N-S(2): 0.148 E-W(1): 0.126 E-W(2): 0.185 *
	TH	2.00	475	3,200	0.148	
	LT	1.00	329	1,600	0.206 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.567 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Northbound	RT	0.00	157	0	0.000	ICU: 0.667
	TH	2.00	407	3,200	0.176 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	1.00	202	1,600	0.126	LOS: B
	TH	2.00	310	3,200	0.097	
	LT	1.00	296	1,600	0.185 *	

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): 0.506 * N-S(2): 0.185 E-W(1): 0.372 * E-W(2): 0.143
	TH	2.00	591	3,200	0.185	
	LT	1.00	447	1,600	0.279 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.878 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	
Northbound	RT	0.00	197	0	0.000	ICU: 0.978
	TH	2.00	528	3,200	0.227 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	1.00	152	1,600	0.095	LOS: E
	TH	2.00	1,191	3,200	0.372 *	
	LT	1.00	228	1,600	0.143	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 4 - 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	146	1,067	0.000	N-S(1): 0.337 *
	TH	1.00	146	1,067	0.137	N-S(2): 0.193
	LT	1.00	93	1,067	0.087 *	E-W(1): 0.182
Westbound	RT	1.00	142	1,067	0.046	E-W(2): 0.317 *
	TH	2.00	453	3,200	0.142 *	V/C: 0.654
	LT	1.00	111	1,600	0.069	Lost Time: 0.100
Northbound	RT	1.00	158	1,600	0.099	ITS: 0.000
	TH	1.00	267	1,067	0.250 *	
	LT	1.00	89	1,600	0.056	
Eastbound	RT	0.00	34	0	0.000	ICU: 0.754
	TH	2.00	326	3,200	0.113	
	LT	1.00	187	1,067	0.175 *	LOS: C

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	268	1,067	0.015	N-S(1): 0.280
	TH	1.00	287	1,067	0.269 *	N-S(2): 0.289 *
	LT	1.00	115	1,067	0.108	E-W(1): 0.260
Westbound	RT	1.00	155	1,067	0.037	E-W(2): 0.345 *
	TH	2.00	348	3,200	0.109 *	V/C: 0.634
	LT	1.00	89	1,600	0.056	Lost Time: 0.100
Northbound	RT	1.00	102	1,600	0.064	ITS: 0.000
	TH	1.00	183	1,067	0.172	
	LT	1.00	32	1,600	0.020 *	
Eastbound	RT	0.00	83	0	0.000	ICU: 0.734
	TH	2.00	569	3,200	0.204	
	LT	1.00	252	1,067	0.236 *	LOS: C

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 5 - Bateman Ave/Avenida Barbosa & Buena Vista St/Alpha St
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 :	NBR,		
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	4	0	0.000	N-S(1): 0.265 *
	TH	2.00	119	1,600	0.041 *	N-S(2): 0.000
	LT	0.00	8	1,600	0.005	E-W(1): 0.123 *
Westbound	RT	0.00	13	0	0.000	E-W(2): 0.018
	TH	1.00	9	1,600	0.014	V/C: 0.388
	LT	2.00	346	2,880	0.120 *	Lost Time: 0.100
Northbound	RT	2.00	954	3,200	0.178	ITS: 0.000
	TH	1.00	294	1,600	0.224 *	
	LT	0.00	64	1,600	0.040	
Eastbound	RT	1.00	13	1,600	0.000	ICU: 0.488
	TH	2.00	8	3,200	0.003 *	
	LT	1.00	6	1,600	0.004	LOS: A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	1	0	0.000	N-S(1): 0.186 *
	TH	2.00	283	1,600	0.094 *	N-S(2): 0.000
	LT	0.00	17	1,600	0.011	E-W(1): 0.351 *
Westbound	RT	0.00	13	0	0.000	E-W(2): 0.022
	TH	1.00	17	1,600	0.019	V/C: 0.537
	LT	2.00	870	2,880	0.302 *	Lost Time: 0.100
Northbound	RT	2.00	578	3,200	0.000	ITS: 0.000
	TH	1.00	134	1,600	0.092 *	
	LT	0.00	13	1,600	0.008	
Eastbound	RT	1.00	85	1,600	0.049 *	ICU: 0.637
	TH	2.00	33	3,200	0.010	
	LT	1.00	4	1,600	0.003	LOS: B

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 6 - Avenida Barbosa & Arrow Hwy
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	187	1,600	0.000	N-S(1):	0.098 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	2.00	282	2,880	0.098 *	E-W(1):	0.157
Westbound	RT	1.00	853	1,600	0.533	E-W(2):	0.920 *
	TH	2.00	2,118	3,200	0.662 *	V/C:	1.018
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	1.118
	LT	0.00	0	0	0.000	LOS:	F
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	503	3,200	0.157		
	LT	1.00	412	1,600	0.258 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	501	1,600	0.198	N-S(1):	0.255 *
	TH	0.00	0	0	0.000	N-S(2):	0.198
	LT	2.00	733	2,880	0.255 *	E-W(1):	0.338
Westbound	RT	1.00	354	1,600	0.221	E-W(2):	0.487 *
	TH	2.00	821	3,200	0.257 *	V/C:	0.742
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.842
	LT	0.00	0	0	0.000	LOS:	D
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	1,083	3,200	0.338		
	LT	1.00	368	1,600	0.230 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 7 - I-605 SB On-ramp & Live Oak Ave
Description: Future Plus Project

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

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

OLA Movements :
 FF Movements: EBR,

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 * N-S(2): 0.000 * E-W(1): 0.530 * E-W(2): 0.528
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.530 Lost Time: 0.100 ITS: 0.000
	TH	2.00	1,690	3,200	0.528	
	LT	1.00	683	1,600	0.427 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.630
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Eastbound	RT	1.00	520	1,600	0.000	LOS: B
	TH	2.00	331	3,200	0.103 *	
	LT	0.00	0	0	0.000	

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): 0.000 * N-S(2): 0.000 * E-W(1): 0.832 * E-W(2): 0.405
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Westbound	RT	0.00	0	0	0.000	V/C: 0.832 Lost Time: 0.100 ITS: 0.000
	TH	2.00	1,297	3,200	0.405	
	LT	1.00	716	1,600	0.448 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.932
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000 *	
Eastbound	RT	1.00	1,506	1,600	0.000	LOS: E
	TH	2.00	1,229	3,200	0.384 *	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 9 - I-605 SB Off-ramp & Arrow Hwy
Description: Future Plus Project

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

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

OLA Movements :
 FF Movements: SBR,

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	852	1,600	0.000	N-S(1):	0.370 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	592	1,600	0.370 *	E-W(1):	0.168
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.640 *
	TH	2.00	2,049	3,200	0.640 *	V/C:	1.010
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	1.110
	LT	0.00	0	0	0.000	LOS:	F
Eastbound	RT	0.00	0	0	0.000		
	TH	3.00	808	4,800	0.168		
	LT	0.00	0	0	0.000 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	482	1,600	0.000	N-S(1):	0.279 *
	TH	0.00	0	0	0.000	N-S(2):	0.000
	LT	1.00	446	1,600	0.279 *	E-W(1):	0.371 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.188
	TH	2.00	602	3,200	0.188	V/C:	0.650
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	0.00	0	0	0.000 *	ICU:	0.750
	LT	0.00	0	0	0.000	LOS:	C
Eastbound	RT	0.00	0	0	0.000		
	TH	3.00	1,782	4,800	0.371 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 10 - Buena Vista St & Huntington Dr
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	87	0	0.000	N-S(1):	0.174
	TH	2.00	265	3,200	0.110 *	N-S(2):	0.209 *
	LT	1.00	72	1,600	0.045	E-W(1):	0.217
Westbound	RT	1.00	133	1,600	0.061	E-W(2):	0.562 *
	TH	2.00	1,681	3,200	0.525 *	V/C:	0.771
	LT	1.00	175	1,600	0.109	Lost Time:	0.100
Northbound	RT	0.00	133	0	0.000	ITS:	0.000
	TH	2.00	281	3,200	0.129	ICU:	0.871
	LT	1.00	159	1,600	0.099 *	LOS:	D
Eastbound	RT	1.00	152	1,600	0.045		
	TH	2.00	345	3,200	0.108		
	LT	1.00	59	1,600	0.037 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	92	0	0.000	N-S(1):	0.319 *
	TH	2.00	296	3,200	0.121	N-S(2):	0.262
	LT	1.00	180	1,600	0.113 *	E-W(1):	0.604 *
Westbound	RT	1.00	104	1,600	0.009	E-W(2):	0.283
	TH	2.00	662	3,200	0.207	V/C:	0.923
	LT	1.00	291	1,600	0.182 *	Lost Time:	0.100
Northbound	RT	0.00	311	0	0.000	ITS:	0.000
	TH	2.00	349	3,200	0.206 *	ICU:	1.023
	LT	1.00	225	1,600	0.141	LOS:	F
Eastbound	RT	1.00	240	1,600	0.080		
	TH	2.00	1,349	3,200	0.422 *		
	LT	1.00	122	1,600	0.076		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 11 - Buena Vista St & Central Ave
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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): 0.238 *
	TH	2.00	564	3,200	0.184	N-S(2): 0.210
	LT	1.00	42	1,600	0.026 *	E-W(1): 0.356 *
Westbound	RT	1.00	320	1,600	0.187	E-W(2): 0.187
	TH	1.00	149	1,600	0.093	V/C: 0.594
	LT	1.00	497	1,600	0.311 *	Lost Time: 0.100
Northbound	RT	0.00	325	0	0.000	ITS: 0.000
	TH	2.00	354	3,200	0.212 *	ICU: 0.694
	LT	1.00	42	1,600	0.026	LOS: B
Eastbound	RT	0.00	48	0	0.000	
	TH	1.00	24	1,600	0.045 *	
	LT	1.00	0	1,600	0.000	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	36	0	0.000	N-S(1): 0.313 *
	TH	2.00	736	3,200	0.241	N-S(2): 0.272
	LT	1.00	96	1,600	0.060 *	E-W(1): 0.358 *
Westbound	RT	1.00	335	1,600	0.179	E-W(2): 0.183
	TH	1.00	134	1,600	0.084	V/C: 0.671
	LT	1.00	318	1,600	0.199 *	Lost Time: 0.100
Northbound	RT	0.00	242	0	0.000	ITS: 0.000
	TH	2.00	569	3,200	0.253 *	ICU: 0.771
	LT	1.00	50	1,600	0.031	LOS: C
Eastbound	RT	0.00	157	0	0.000	
	TH	1.00	97	1,600	0.159 *	
	LT	1.00	6	1,600	0.004	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 12 - 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 %

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	288	0	0.000	N-S(1):	0.225
	TH	2.00	816	3,200	0.345 *	N-S(2):	0.453 *
	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 *	V/C:	0.453
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	720	3,200	0.225	ICU:	0.553
	LT	1.00	173	1,600	0.108 *	LOS:	A
Eastbound	RT	0.00	0	0	0.000		
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	354	0	0.000	N-S(1):	0.269
	TH	2.00	858	3,200	0.379 *	N-S(2):	0.686 *
	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 *	V/C:	0.686
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	861	3,200	0.269	ICU:	0.786
	LT	1.00	491	1,600	0.307 *	LOS:	C
Eastbound	RT	0.00	0	0	0.000		
	TH	0.00	0	0	0.000 *		
	LT	0.00	0	0	0.000 *		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 13 - 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): 0.351 *
	TH	2.00	567	3,200	0.177	N-S(2): 0.177
	LT	1.00	264	1,600	0.165 *	E-W(1): 0.357 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.223
	TH	0.00	0	0	0.000	V/C: 0.708
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	1.00	297	1,600	0.186 *	ITS: 0.000
	TH	2.00	524	3,200	0.164	ICU: 0.808
	LT	0.00	0	0	0.000	LOS: D
Eastbound	RT	0.00	571	1,600	0.357 *	
	TH	2.00	13	1,600	0.231	
	LT	0.00	356	1,600	0.223	

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): 0.553 *
	TH	2.00	542	3,200	0.169	N-S(2): 0.169
	LT	1.00	296	1,600	0.185 *	E-W(1): 0.317 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.252
	TH	0.00	0	0	0.000	V/C: 0.870
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	1.00	588	1,600	0.368 *	ITS: 0.000
	TH	2.00	955	3,200	0.298	ICU: 0.970
	LT	0.00	0	0	0.000	LOS: E
Eastbound	RT	0.00	200	0	0.000	
	TH	2.00	411	1,600	0.317 *	
	LT	0.00	403	1,600	0.252	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 15 - 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	122	0	0.000	N-S(1): 0.936 *
	TH	2.00	314	1,067	0.409	N-S(2): 0.000
	LT	0.00	702	1,067	0.658 *	E-W(1): 0.252
Westbound	RT	1.00	313	1,067	0.000	E-W(2): 0.309 *
	TH	2.00	382	3,200	0.119 *	V/C: 1.245
	LT	1.00	155	1,600	0.097	Lost Time: 0.100
Northbound	RT	0.00	275	0	0.000	ITS: 0.000
	TH	2.00	319	2,134	0.278 *	ICU: 1.345
	LT	1.00	170	1,600	0.106	LOS: F
Eastbound	RT	1.00	51	1,600	0.000	
	TH	2.00	495	3,200	0.155	
	LT	1.00	203	1,067	0.190 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	124	0	0.000	N-S(1): 0.658 *
	TH	2.00	316	1,067	0.324 *	N-S(2): 0.000
	LT	0.00	252	1,067	0.236	E-W(1): 0.314
Westbound	RT	1.00	804	1,067	0.635 *	E-W(2): 0.857 *
	TH	2.00	404	3,200	0.126	V/C: 1.515
	LT	1.00	249	1,600	0.156	Lost Time: 0.100
Northbound	RT	0.00	167	0	0.000	ITS: 0.000
	TH	2.00	546	2,134	0.334 *	ICU: 1.615
	LT	1.00	95	1,600	0.059	LOS: F
Eastbound	RT	1.00	114	1,600	0.042	
	TH	2.00	506	3,200	0.158	
	LT	1.00	237	1,067	0.222 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 21 - Hope Dr & Duarte Rd
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.038 *
	LT	0.00	0	0	0.000	E-W(1):	0.371 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.249
	TH	2.00	798	3,200	0.249	V/C:	0.409
	LT	1.00	71	1,600	0.044 *	Lost Time:	0.100
Northbound	RT	1.00	20	1,600	0.000	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.509
	LT	1.00	60	1,600	0.038 *	LOS:	A
Eastbound	RT	0.00	257	0	0.000		
	TH	2.00	788	3,200	0.327 *		
	LT	0.00	0	0	0.000		

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):	0.018
	TH	0.00	0	0	0.000 *	N-S(2):	0.158 *
	LT	0.00	0	0	0.000	E-W(1):	0.286 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.246
	TH	2.00	788	3,200	0.246	V/C:	0.444
	LT	1.00	16	1,600	0.010 *	Lost Time:	0.100
Northbound	RT	1.00	37	1,600	0.018	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.544
	LT	1.00	253	1,600	0.158 *	LOS:	A
Eastbound	RT	0.00	72	0	0.000		
	TH	2.00	812	3,200	0.276 *		
	LT	0.00	0	0	0.000		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 23 - Highland Ave & Huntington Dr
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	44	1,600	0.018	N-S(1):	0.115
	TH	2.00	288	3,200	0.062 *	N-S(2):	0.141 *
	LT	0.00	64	1,600	0.040	E-W(1):	0.482
Westbound	RT	1.00	75	1,600	0.027	E-W(2):	0.583 *
	TH	2.00	1,804	3,200	0.564 *	V/C:	0.724
	LT	1.00	587	1,600	0.367	Lost Time:	0.100
Northbound	RT	1.00	227	1,600	0.000	ITS:	0.000
	TH	2.00	123	3,200	0.075	ICU:	0.824
	LT	0.00	127	1,600	0.079 *	LOS:	D
Eastbound	RT	1.00	123	1,600	0.037		
	TH	2.00	367	3,200	0.115		
	LT	1.00	31	1,600	0.019 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	56	1,600	0.024	N-S(1):	0.214 *
	TH	2.00	180	3,200	0.050	N-S(2):	0.144
	LT	0.00	83	1,600	0.052 *	E-W(1):	0.547 *
Westbound	RT	1.00	43	1,600	0.001	E-W(2):	0.283
	TH	2.00	831	3,200	0.260	V/C:	0.761
	LT	1.00	192	1,600	0.120 *	Lost Time:	0.100
Northbound	RT	1.00	355	1,600	0.162 *	ITS:	0.000
	TH	2.00	162	3,200	0.098	ICU:	0.861
	LT	0.00	150	1,600	0.094	LOS:	D
Eastbound	RT	1.00	206	1,600	0.082		
	TH	2.00	1,367	3,200	0.427 *		
	LT	1.00	36	1,600	0.023		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 24 - Highland Ave & Central Ave
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	124	1,600	0.058	N-S(1):	0.132
	TH	2.00	779	3,200	0.154 *	N-S(2):	0.217 *
	LT	0.00	84	1,600	0.053	E-W(1):	0.361
Westbound	RT	0.00	73	0	0.000	E-W(2):	0.539 *
	TH	1.00	316	1,600	0.500 *	V/C:	0.756
	LT	0.00	411	1,600	0.257	Lost Time:	0.100
Northbound	RT	1.00	146	1,600	0.000	ITS:	0.000
	TH	2.00	257	3,200	0.079	ICU:	0.856
	LT	0.00	100	1,600	0.063 *	LOS:	D
Eastbound	RT	1.00	206	1,600	0.098		
	TH	1.00	105	1,600	0.104		
	LT	0.00	62	1,600	0.039 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	79	1,600	0.020	N-S(1):	0.404 *
	TH	2.00	356	3,200	0.095	N-S(2):	0.139
	LT	0.00	176	1,600	0.110 *	E-W(1):	0.374 *
Westbound	RT	0.00	30	0	0.000	E-W(2):	0.208
	TH	1.00	104	1,600	0.149	V/C:	0.778
	LT	0.00	104	1,600	0.065 *	Lost Time:	0.100
Northbound	RT	1.00	522	1,600	0.294 *	ITS:	0.000
	TH	2.00	589	3,200	0.185	ICU:	0.878
	LT	0.00	71	1,600	0.044	LOS:	D
Eastbound	RT	0.00	75	0	0.000		
	TH	1.00	325	1,600	0.309 *		
	LT	0.00	94	1,600	0.059		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 26 - Highland Ave & Business Center Dr
Description: Future Plus Project

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

N-S Split Phase : N
 E-W Split Phase : Y
 Lost Time (% of cycle) : 10
 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	424	0	0.000	N-S(1): 0.139
	TH	2.00	868	3,200	0.404 *	N-S(2): 0.557 *
	LT	1.00	45	1,600	0.028	E-W(1): 0.127 *
Westbound	RT	0.00	14	0	0.000	E-W(2): 0.000
	TH	1.00	0	1,600	0.009 *	V/C: 0.684
	LT	1.00	13	1,600	0.008	Lost Time: 0.100
Northbound	RT	0.00	38	0	0.000	ITS: 0.000
	TH	2.00	318	3,200	0.111	ICU: 0.784
	LT	1.00	245	1,600	0.153 *	LOS: C
Eastbound	RT	0.00	189	0	0.000	
	TH	1.00	0	1,600	0.118 *	
	LT	1.00	116	1,600	0.073	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	268	0	0.000	N-S(1): 0.266
	TH	2.00	273	3,200	0.169 *	N-S(2): 0.283 *
	LT	1.00	20	1,600	0.013	E-W(1): 0.217 *
Westbound	RT	0.00	25	0	0.000	E-W(2): 0.000
	TH	1.00	0	1,600	0.016	V/C: 0.500
	LT	1.00	44	1,600	0.028 *	Lost Time: 0.100
Northbound	RT	0.00	27	0	0.000	ITS: 0.000
	TH	2.00	784	3,200	0.253	ICU: 0.600
	LT	1.00	182	1,600	0.114 *	LOS: A
Eastbound	RT	0.00	301	0	0.000	
	TH	1.00	1	1,600	0.189 *	
	LT	1.00	245	1,600	0.153	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 27 - I-605/Mt Olive Dr & Huntington Dr
Description: Future Plus Project

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

N-S Split Phase : Y
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.576 *
	TH	2.00	333	3,200	0.136 *	N-S(2):	0.000
	LT	1.00	60	1,600	0.038	E-W(1):	0.363
Westbound	RT	1.00	136	1,600	0.066	E-W(2):	0.475 *
	TH	2.00	1,390	3,200	0.434 *	V/C:	1.051
	LT	1.00	424	1,600	0.265	Lost Time:	0.100
Northbound	RT	1.00	312	1,600	0.063	ITS:	0.000
	TH	0.24	155	391	0.396	ICU:	1.151
	LT	1.76	1,112	2,528	0.440 *	LOS:	F
Eastbound	RT	1.00	362	1,600	0.006		
	TH	2.00	314	3,200	0.098		
	LT	1.00	66	1,600	0.041 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	60	0	0.000	N-S(1):	0.495 *
	TH	2.00	323	3,200	0.120 *	N-S(2):	0.000
	LT	1.00	86	1,600	0.054	E-W(1):	0.608 *
Westbound	RT	1.00	40	1,600	0.000	E-W(2):	0.225
	TH	2.00	613	3,200	0.192	V/C:	1.103
	LT	1.00	289	1,600	0.181 *	Lost Time:	0.100
Northbound	RT	1.00	745	1,600	0.375 *	ITS:	0.000
	TH	0.63	224	1,010	0.222	ICU:	1.203
	LT	1.37	486	1,971	0.247	LOS:	F
Eastbound	RT	1.00	881	1,600	0.427 *		
	TH	2.00	990	3,200	0.309		
	LT	1.00	53	1,600	0.033		

* - Denotes critical movement

HCM

HCM 2010 Signalized Intersection Summary
 3: Evergreen St & Mountain Ave

Duarte City of Hope
 Future Plus Project AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	296	310	202	0	0	0	0	407	157	329	475	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	318	333	217				0	438	169	354	511	0
Adj No. of Lanes	1	2	1				0	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	426	849	380				0	1527	584	562	2157	0
Arrive On Green	0.24	0.24	0.24				0.00	0.61	0.61	0.61	0.61	0.00
Sat Flow, veh/h	1774	3539	1583				0	2599	958	810	3632	0
Grp Volume(v), veh/h	318	333	217				0	308	299	354	511	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1770	1694	810	1770	0
Q Serve(g_s), s	8.8	4.2	6.4				0.0	4.4	4.4	19.5	3.5	0.0
Cycle Q Clear(g_c), s	8.8	4.2	6.4				0.0	4.4	4.4	24.0	3.5	0.0
Prop In Lane	1.00		1.00				0.00		0.57	1.00		0.00
Lane Grp Cap(c), veh/h	426	849	380				0	1078	1032	562	2157	0
V/C Ratio(X)	0.75	0.39	0.57				0.00	0.29	0.29	0.63	0.24	0.00
Avail Cap(c_a), veh/h	535	1067	477				0	1200	1148	617	2400	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.7	16.9	17.8				0.0	4.9	4.9	10.6	4.7	0.0
Incr Delay (d2), s/veh	4.4	0.3	1.4				0.0	0.1	0.2	1.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	4.8	2.1	2.9				0.0	2.1	2.1	4.5	1.7	0.0
LnGrp Delay(d),s/veh	23.1	17.2	19.1				0.0	5.0	5.1	12.4	4.8	0.0
LnGrp LOS	C	B	B					A	A	B	A	
Approach Vol, veh/h		868						607			865	
Approach Delay, s/veh		19.8						5.1			7.9	
Approach LOS		B						A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		36.4		16.7		36.4						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		36.0		16.0		36.0						
Max Q Clear Time (g_c+I1), s		6.4		10.8		26.0						
Green Ext Time (p_c), s		12.2		1.9		6.4						
Intersection Summary												
HCM 2010 Ctrl Delay			11.6									
HCM 2010 LOS			B									

Intersection												
Int Delay, s/veh	202.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	368	0	0	1500	0	0	0	775	0	0	803
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	400	0	0	1630	0	0	0	842	0	0	873

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1630	0	0	400	0	0	1215	2030	200	1830	2030	815
Stage 1	-	-	-	-	-	-	400	400	-	1630	1630	-
Stage 2	-	-	-	-	-	-	815	1630	-	200	400	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	394	-	-	1155	-	-	137	57 ~ 808	-	48	57 ~ 321	-
Stage 1	-	-	-	-	-	-	597	600	-	106	158	-
Stage 2	-	-	-	-	-	-	338	158	-	783	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	394	-	-	1155	-	-	-	57 ~ 808	-	-	57 ~ 321	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	57	-	-	57	-
Stage 1	-	-	-	-	-	-	597	600	-	106	158	-
Stage 2	-	-	-	-	-	-	-	158	-	-	600	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	65.7	\$ 807.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	808	394	-	-	1155	-	-	321
HCM Lane V/C Ratio	1.043	-	-	-	-	-	-	2.719
HCM Control Delay (s)	65.7	0	-	-	0	-	-	\$ 807.2
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	20.1	0	-	-	0	-	-	73.4

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

HCM 2010 Signalized Intersection Summary
 9: Arrow Hwy & I-605 SB Off-Ramp

Duarte City of Hope
 Future Plus Project AM



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑		↵	↶		
Volume (veh/h)	0	808	2049	0	592	852		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863		
Adj Flow Rate, veh/h	0	842	2134	0	617	0		
Adj No. of Lanes	0	3	2	0	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	0	2	2	0	2	2		
Cap, veh/h	0	2668	1857	0	652	582		
Arrive On Green	0.00	0.52	0.52	0.00	0.37	0.00		
Sat Flow, veh/h	0	5421	3725	0	1774	1583		
Grp Volume(v), veh/h	0	842	2134	0	617	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	0	1774	1583		
Q Serve(g_s), s	0.0	7.0	39.0	0.0	25.1	0.0		
Cycle Q Clear(g_c), s	0.0	7.0	39.0	0.0	25.1	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2668	1857	0	652	582		
V/C Ratio(X)	0.00	0.32	1.15	0.00	0.95	0.00		
Avail Cap(c_a), veh/h	0	2668	1857	0	668	596		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	10.1	17.7	0.0	22.8	0.0		
Incr Delay (d2), s/veh	0.0	0.1	73.9	0.0	22.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(-26165%),veh/ln	0.0	3.3	37.9	0.0	16.2	0.0		
LnGrp Delay(d),s/veh	0.0	10.1	91.6	0.0	45.0	0.0		
LnGrp LOS		B	F		D			
Approach Vol, veh/h		842	2134		617			
Approach Delay, s/veh		10.1	91.6		45.0			
Approach LOS		B	F		D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				43.0		31.3		43.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				39.0		28.0		39.0
Max Q Clear Time (g_c+I1), s				9.0		27.1		41.0
Green Ext Time (p_c), s				26.9		0.3		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			64.5					
HCM 2010 LOS			E					

HCM 2010 Signalized Intersection Summary
 13: Evergreen St & Buena Vista St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↑↑	↗	↘	↑↑	
Volume (veh/h)	356	13	571	0	0	0	0	524	297	264	567	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	429	16	688				0	631	358	318	683	0
Adj No. of Lanes	0	2	0				0	2	1	1	2	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	514	19	475				0	2006	897	388	2006	0
Arrive On Green	0.30	0.30	0.30				0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	1713	64	1583				0	3632	1583	567	3632	0
Grp Volume(v), veh/h	445	0	688				0	631	358	318	683	0
Grp Sat Flow(s),veh/h/ln	1777	0	1583				0	1770	1583	567	1770	0
Q Serve(g_s), s	14.0	0.0	18.0				0.0	5.6	7.6	28.4	6.2	0.0
Cycle Q Clear(g_c), s	14.0	0.0	18.0				0.0	5.6	7.6	34.0	6.2	0.0
Prop In Lane	0.96		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	533	0	475				0	2006	897	388	2006	0
V/C Ratio(X)	0.83	0.00	1.45				0.00	0.31	0.40	0.82	0.34	0.00
Avail Cap(c_a), veh/h	533	0	475				0	2006	897	388	2006	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.6	0.0	21.0				0.0	6.9	7.3	18.1	7.0	0.0
Incr Delay (d2), s/veh	11.0	0.0	213.4				0.0	0.1	0.3	13.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	0.0	0.0	35.9				0.0	2.7	3.4	6.6	3.0	0.0
LnGrp Delay(d),s/veh	30.6	0.0	234.4				0.0	6.9	7.6	31.1	7.1	0.0
LnGrp LOS	C		F					A	A	C	A	
Approach Vol, veh/h		1133						989			1001	
Approach Delay, s/veh		154.3						7.2			14.7	
Approach LOS		F						A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		22.0		38.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		34.0		18.0		34.0						
Max Q Clear Time (g_c+I1), s		9.6		20.0		36.0						
Green Ext Time (p_c), s		15.8		0.0		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			63.0									
HCM 2010 LOS			E									

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	1	13	14	1	45	10	762	57	9	1088	19
Conflicting Peds, #/hr	0	0	1	0	0	1	4	0	5	5	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	1	14	15	1	49	11	828	62	10	1183	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1651	2127	608	1494	2106	451	1204	0	0	891	0	0
Stage 1	1214	1214	-	882	882	-	-	-	-	-	-	-
Stage 2	437	913	-	612	1224	-	-	-	-	-	-	-
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	65	49	439	85	51	556	575	-	-	757	-	-
Stage 1	193	253	-	307	362	-	-	-	-	-	-	-
Stage 2	568	350	-	447	250	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	54	45	437	76	47	553	573	-	-	754	-	-
Mov Cap-2 Maneuver	54	45	-	76	47	-	-	-	-	-	-	-
Stage 1	185	243	-	295	348	-	-	-	-	-	-	-
Stage 2	494	336	-	412	240	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.6	29.9	0.3	0.3
HCM LOS	E	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	573	-	-	131	209	754	-	-
HCM Lane V/C Ratio	0.019	-	-	0.158	0.312	0.013	-	-
HCM Control Delay (s)	11.4	0.2	-	37.6	29.9	9.8	0.2	-
HCM Lane LOS	B	A	-	E	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1.3	0	-	-

Intersection

Int Delay, s/veh 2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	27	27	544	333	178	245
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	230	-
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	29	29	591	362	193	266

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1292	477	0	0	953	0
Stage 1	772	-	-	-	-	-
Stage 2	520	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	155	534	-	-	717	-
Stage 1	416	-	-	-	-	-
Stage 2	561	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	113	534	-	-	717	-
Mov Cap-2 Maneuver	113	-	-	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	410	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.9	0	5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	113	534	717	-
HCM Lane V/C Ratio	-	-	0.26	0.055	0.27	-
HCM Control Delay (s)	-	-	47.7	12.1	11.9	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	1	0.2	1.1	-

Intersection												
Int Delay, s/veh	150.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	389	0	0	555	4	403	0	218	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									
Storage Length	-	-	-	-	-	-	0	-	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	8	423	0	0	603	4	438	0	237	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	608	0	0	423	0	0	1047	1046	423	1043	1043	605
Stage 1	-	-	-	-	-	-	438	438	-	605	605	-
Stage 2	-	-	-	-	-	-	609	608	-	438	438	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	970	-	-	1136	-	-	~ 206	228	631	207	229	498
Stage 1	-	-	-	-	-	-	597	579	-	485	487	-
Stage 2	-	-	-	-	-	-	482	486	-	597	579	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	1136	-	-	~ 201	225	631	128	226	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 201	225	-	128	226	-
Stage 1	-	-	-	-	-	-	590	573	-	480	487	-
Stage 2	-	-	-	-	-	-	475	486	-	369	573	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	\$ 384.5	12.3
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	631	970	-	-	1136	-	-	498
HCM Lane V/C Ratio	2.179	0.376	0.008	-	-	-	-	-	0.015
HCM Control Delay (s)	\$ 584.9	14.1	8.7	0	-	0	-	-	12.3
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	34.4	1.7	0	-	-	0	-	-	0

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

Intersection

Int Delay, s/veh 1.7

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	51	1390	9	4	789	20	11
Conflicting Peds, #/hr	0	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	0	-	-	113	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	55	1511	10	4	858	22	12

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	626	0	0	1521	0	2065	763
Stage 1	-	-	-	-	-	1627	-
Stage 2	-	-	-	-	-	438	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	576	-	-	435	-	47	347
Stage 1	-	-	-	-	-	146	-
Stage 2	-	-	-	-	-	618	-
Platoon blocked, %	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	576	-	-	434	-	46	346
Mov Cap-2 Maneuver	-	-	-	-	-	46	-
Stage 1	-	-	-	-	-	146	-
Stage 2	-	-	-	-	-	611	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	0.1	106.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	66	576	-	-	434	-
HCM Lane V/C Ratio	0.511	0.096	-	-	0.01	-
HCM Control Delay (s)	106.5	11.9	-	-	13.4	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	2.1	0.3	-	-	0	-

Intersection

Int Delay, s/veh 36.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1044	359	143	721	78	11
Conflicting Peds, #/hr	0	2	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	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	1135	390	155	784	85	12

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1525
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	433
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	433
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	\$ 926.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	31	346	-	-	433	-
HCM Lane V/C Ratio	2.735	0.035	-	-	0.359	-
HCM Control Delay (s)	\$ 1054.9	15.8	-	-	17.9	-
HCM Lane LOS	F	C	-	-	C	-
HCM 95th %tile Q(veh)	9.9	0.1	-	-	1.6	-

Notes

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

Intersection												
Intersection Delay, s/veh	8											
Intersection LOS	A											
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	8	17	3	0	83	4	21	0	6	17	20
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	0	9	18	3	0	90	4	23	0	7	18	22
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.6	8.1	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	29%	77%	76%
Vol Thru, %	40%	61%	4%	21%
Vol Right, %	47%	11%	19%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	43	28	108	115
LT Vol	6	8	83	87
Through Vol	17	17	4	24
RT Vol	20	3	21	4
Lane Flow Rate	47	30	117	125
Geometry Grp	1	1	1	1
Degree of Util (X)	0.054	0.038	0.143	0.151
Departure Headway (Hd)	4.163	4.449	4.398	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	864	808	819	807
Service Time	2.171	2.456	2.403	2.466
HCM Lane V/C Ratio	0.054	0.037	0.143	0.155
HCM Control Delay	7.4	7.6	8.1	8.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0.5	0.5

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	87	24	4
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	95	26	4
Number of Lanes	0	0	1	0

Approach SB

Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.3
HCM LOS	A

Lane

Intersection

Int Delay, s/veh 2.1

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1	685	125	234	857	10	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	105	-	-	105	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1	745	136	254	932	11	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	680	0	440
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	6.44	4.14	6.94
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.52	2.22	3.32
Pot Cap-1 Maneuver	532	764	565
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	532	764	565
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	46.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	117	532	-	-	764	-
HCM Lane V/C Ratio	0.26	0.002	-	-	0.333	-
HCM Control Delay (s)	46.3	11.8	-	-	12	-
HCM Lane LOS	E	B	-	-	B	-
HCM 95th %tile Q(veh)	1	0	-	-	1.5	-

Intersection

Int Delay, s/veh 39.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	42	4	48	1	1	17	8	435	7	96	1305	35
Conflicting Peds, #/hr	0	0	0	0	0	1	5	0	2	1	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	46	4	52	1	1	18	9	473	8	104	1418	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1901	2145	733	1415	2160	246	1457	0	0	481	0	0
Stage 1	1646	1646	-	495	495	-	-	-	-	-	-	-
Stage 2	255	499	-	920	1665	-	-	-	-	-	-	-
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	~ 42	48	363	97	47	754	460	-	-	1078	-	-
Stage 1	103	155	-	525	544	-	-	-	-	-	-	-
Stage 2	727	542	-	292	152	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 23	22	361	41	22	750	458	-	-	1074	-	-
Mov Cap-2 Maneuver	~ 23	22	-	41	22	-	-	-	-	-	-	-
Stage 1	100	75	-	510	529	-	-	-	-	-	-	-
Stage 2	686	527	-	113	73	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 801.4	24.5	0.4	2.4
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	458	-	-	44	205	1074	-
HCM Lane V/C Ratio	0.019	-	-	2.322	0.101	0.097	-
HCM Control Delay (s)	13	0.2	-\$ 801.4	24.5	8.7	2	-
HCM Lane LOS	B	A	-	F	C	A	A
HCM 95th %tile Q(veh)	0.1	-	-	10.8	0.3	0.3	-

Notes

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

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	0	0	0	1	0	0	1	1	1	1	1	0
Stage 1	-	-	-	-	-	-	1	1	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	1	1	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	-	-	-	1622	-	-	1022	895	1084	1022	895	-
Stage 1	-	-	-	-	-	-	1022	895	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	895	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1622	-	-	-	894	1083	1022	894	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	894	-	1022	894	-
Stage 1	-	-	-	-	-	-	1021	894	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	1022	894	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	0	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	4.14	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

HCM 2010 Signalized Intersection Summary
 3: Evergreen St & Mountain Ave

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	228	1191	152	0	0	0	0	528	197	447	591	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863				0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	245	1281	163				0	568	212	481	635	0
Adj No. of Lanes	1	2	1				0	2	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2				0	2	2	2	2	0
Cap, veh/h	532	1062	475				0	1431	533	424	2006	0
Arrive On Green	0.30	0.30	0.30				0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	1774	3539	1583				0	2619	940	690	3632	0
Grp Volume(v), veh/h	245	1281	163				0	398	382	481	635	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				0	1770	1697	690	1770	0
Q Serve(g_s), s	6.7	18.0	4.8				0.0	7.5	7.6	26.4	5.7	0.0
Cycle Q Clear(g_c), s	6.7	18.0	4.8				0.0	7.5	7.6	34.0	5.7	0.0
Prop In Lane	1.00		1.00				0.00		0.55	1.00		0.00
Lane Grp Cap(c), veh/h	532	1062	475				0	1003	962	424	2006	0
V/C Ratio(X)	0.46	1.21	0.34				0.00	0.40	0.40	1.13	0.32	0.00
Avail Cap(c_a), veh/h	532	1062	475				0	1003	962	424	2006	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.1	21.0	16.4				0.0	7.3	7.3	20.5	6.9	0.0
Incr Delay (d2), s/veh	0.6	101.9	0.4				0.0	0.3	0.3	85.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%),veh/ln	3.4	23.7	2.1				0.0	3.7	3.6	17.1	2.8	0.0
LnGrp Delay(d),s/veh	17.7	122.9	16.8				0.0	7.5	7.5	106.4	7.0	0.0
LnGrp LOS	B	F	B					A	A	F	A	
Approach Vol, veh/h		1689						780			1116	
Approach Delay, s/veh		97.4						7.5			49.8	
Approach LOS		F						A			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		38.0		22.0		38.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		34.0		18.0		34.0						
Max Q Clear Time (g_c+I1), s		9.6		20.0		36.0						
Green Ext Time (p_c), s		15.7		0.0		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			63.1									
HCM 2010 LOS			E									

Intersection													
Int Delay, s/veh	173.2												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1310	0	0	1201	0	0	0	675	0	0	760
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1424	0	0	1305	0	0	0	734	0	0	826

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1305	0	0	1424	0	0	2077	2729	712	2017	2729	653
Stage 1	-	-	-	-	-	-	1424	1424	-	1305	1305	-
Stage 2	-	-	-	-	-	-	653	1305	-	712	1424	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	526	-	-	474	-	-	31	20	~ 375	34	20	~ 410
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	423	228	-	389	200	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	526	-	-	474	-	-	-	20	~ 375	-	20	~ 410
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	20	-	-	20	-
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	-	228	-	-	200	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	\$ 463.8	\$ 487.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	526	-	-	474	-	-	410
HCM Lane V/C Ratio	1.957	-	-	-	-	-	-	2.015
HCM Control Delay (s)	\$ 463.8	0	-	-	0	-	-	\$ 487.3
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	50.3	0	-	-	0	-	-	57.4

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

HCM 2010 Signalized Intersection Summary
 9: Arrow Hwy & I-605 SB Off-Ramp

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Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑		↵	↵		
Volume (veh/h)	0	1782	602	0	446	482		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863		
Adj Flow Rate, veh/h	0	1856	627	0	465	0		
Adj No. of Lanes	0	3	2	0	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	0	2	2	0	2	2		
Cap, veh/h	0	2294	1596	0	570	509		
Arrive On Green	0.00	0.45	0.45	0.00	0.32	0.00		
Sat Flow, veh/h	0	5421	3725	0	1774	1583		
Grp Volume(v), veh/h	0	1856	627	0	465	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	0	1774	1583		
Q Serve(g_s), s	0.0	11.1	4.2	0.0	8.5	0.0		
Cycle Q Clear(g_c), s	0.0	11.1	4.2	0.0	8.5	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	2294	1596	0	570	509		
V/C Ratio(X)	0.00	0.81	0.39	0.00	0.82	0.00		
Avail Cap(c_a), veh/h	0	2317	1613	0	808	721		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	8.3	6.4	0.0	11.0	0.0		
Incr Delay (d2), s/veh	0.0	2.2	0.2	0.0	4.4	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(-26165%),veh/ln	0.0	5.5	2.0	0.0	4.8	0.0		
LnGrp Delay(d),s/veh	0.0	10.6	6.6	0.0	15.4	0.0		
LnGrp LOS		B	A		B			
Approach Vol, veh/h		1856	627		465			
Approach Delay, s/veh		10.6	6.6		15.4			
Approach LOS		B	A		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				19.8		15.3		19.8
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				16.0		16.0		16.0
Max Q Clear Time (g_c+I1), s				13.1		10.5		6.2
Green Ext Time (p_c), s				2.8		0.8		8.8
Intersection Summary								
HCM 2010 Ctrl Delay			10.5					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 13: Evergreen St & Buena Vista St

Future Plus Project PM
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↑↑	↗	↘	↑↑	
Volume (veh/h)	403	411	200	0	0	0	0	955	588	296	542	0
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900				0	1863	1863	1863	1863	0
Adj Flow Rate, veh/h	486	495	241				0	1151	708	357	653	0
Adj No. of Lanes	0	2	0				0	2	1	1	2	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	0	2	0				0	2	2	2	2	0
Cap, veh/h	381	413	207				0	2065	924	214	2065	0
Arrive On Green	0.28	0.28	0.28				0.00	0.58	0.58	0.58	0.58	0.00
Sat Flow, veh/h	1343	1456	730				0	3632	1583	246	3632	0
Grp Volume(v), veh/h	650	0	572				0	1151	708	357	653	0
Grp Sat Flow(s),veh/h/ln	1796	0	1734				0	1770	1583	246	1770	0
Q Serve(g_s), s	17.0	0.0	17.0				0.0	12.0	20.2	23.0	5.7	0.0
Cycle Q Clear(g_c), s	17.0	0.0	17.0				0.0	12.0	20.2	35.0	5.7	0.0
Prop In Lane	0.75		0.42				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	509	0	491				0	2065	924	214	2065	0
V/C Ratio(X)	1.28	0.00	1.16				0.00	0.56	0.77	1.67	0.32	0.00
Avail Cap(c_a), veh/h	509	0	491				0	2065	924	214	2065	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.5	0.0	21.5				0.0	7.7	9.4	25.0	6.4	0.0
Incr Delay (d2), s/veh	139.3	0.0	94.5				0.0	0.3	3.9	319.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(-26165%)20.0/ln	20.9	0.0	20.9				0.0	5.9	9.7	22.5	2.7	0.0
LnGrp Delay(d),s/veh	160.8	0.0	116.0				0.0	8.1	13.3	344.9	6.5	0.0
LnGrp LOS	F		F					A	B	F	A	
Approach Vol, veh/h		1222						1859			1010	
Approach Delay, s/veh		139.8						10.1			126.1	
Approach LOS		F						B			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		39.0		21.0		39.0						
Change Period (Y+Rc), s		4.0		4.0		4.0						
Max Green Setting (Gmax), s		35.0		17.0		35.0						
Max Q Clear Time (g_c+I1), s		22.2		19.0		37.0						
Green Ext Time (p_c), s		12.3		0.0		0.0						
Intersection Summary												
HCM 2010 Ctrl Delay			77.5									
HCM 2010 LOS			E									

Intersection

Int Delay, s/veh 7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	4	17	14	1	46	14	1495	24	32	607	25
Conflicting Peds, #/hr	0	0	1	0	0	1	4	0	5	5	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	4	4	18	15	1	50	15	1625	26	35	660	27

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1588	2427	349	2072	2427	832	688	0	0	1652	0	0
Stage 1	744	744	-	1669	1669	-	-	-	-	-	-	-
Stage 2	844	1683	-	403	758	-	-	-	-	-	-	-
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	72	32	647	31	32	312	902	-	-	387	-	-
Stage 1	373	420	-	100	151	-	-	-	-	-	-	-
Stage 2	324	149	-	595	413	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	43	22	644	19	22	310	898	-	-	385	-	-
Mov Cap-2 Maneuver	43	22	-	19	22	-	-	-	-	-	-	-
Stage 1	295	358	-	79	119	-	-	-	-	-	-	-
Stage 2	212	118	-	484	352	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	68.2	217.6	1	1.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	898	-	-	83	66	385	-	-
HCM Lane V/C Ratio	0.017	-	-	0.327	1.005	0.09	-	-
HCM Control Delay (s)	9.1	0.9	-	68.2	217.6	15.3	1	-
HCM Lane LOS	A	A	-	F	F	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	5	0.3	-	-

Intersection

Int Delay, s/veh 14.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	218	232	528	29	27	567
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	230	-
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	237	252	574	32	29	616

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	957	303	0 0 605 0
Stage 1	590	-	- - - -
Stage 2	367	-	- - - -
Critical Hdwy	6.84	6.94	- - 4.14 -
Critical Hdwy Stg 1	5.84	-	- - - -
Critical Hdwy Stg 2	5.84	-	- - - -
Follow-up Hdwy	3.52	3.32	- - 2.22 -
Pot Cap-1 Maneuver	256	693	- - 969 -
Stage 1	517	-	- - - -
Stage 2	671	-	- - - -
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	248	693	- - 969 -
Mov Cap-2 Maneuver	248	-	- - - -
Stage 1	517	-	- - - -
Stage 2	651	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	49.9	0	0.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	248	693	969	-
HCM Lane V/C Ratio	-	-	0.955	0.364	0.03	-
HCM Control Delay (s)	-	-	89.1	13.1	8.8	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	8.8	1.7	0.1	-

Intersection

Int Delay, s/veh 113.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	429	0	0	347	4	408	0	206	2	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									
Storage Length	-	-	-	-	-	-	0	-	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	13	466	0	0	377	4	443	0	224	2	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	382	0	0	466	0	0	884	874	466	871	871	379
Stage 1	-	-	-	-	-	-	492	492	-	379	379	-
Stage 2	-	-	-	-	-	-	392	382	-	492	492	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1176	-	-	1095	-	-	~ 266	288	597	271	289	668
Stage 1	-	-	-	-	-	-	558	548	-	643	615	-
Stage 2	-	-	-	-	-	-	633	613	-	558	548	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1176	-	-	1095	-	-	~ 253	284	597	167	285	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 253	284	-	167	285	-
Stage 1	-	-	-	-	-	-	550	540	-	633	615	-
Stage 2	-	-	-	-	-	-	609	613	-	343	540	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	263	12
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	597	1176	-	-	1095	-	-	539
HCM Lane V/C Ratio	1.753	0.375	0.011	-	-	-	-	-	0.05
HCM Control Delay (s)	\$ 388.4	14.6	8.1	0	-	0	-	-	12
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	29.5	1.7	0	-	-	0	-	-	0.2

Notes

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

Intersection

Int Delay, s/veh 1

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	55	836	12	14	1390	14	4
Conflicting Peds, #/hr	0	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	0	-	-	113	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	60	909	13	15	1511	15	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1103	0	0	922	0	1821	464
Stage 1	-	-	-	-	-	1035	-
Stage 2	-	-	-	-	-	786	-
Critical Hdwy	6.44	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	2.52	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	285	-	-	736	-	69	545
Stage 1	-	-	-	-	-	303	-
Stage 2	-	-	-	-	-	410	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	285	-	-	734	-	67	544
Mov Cap-2 Maneuver	-	-	-	-	-	67	-
Stage 1	-	-	-	-	-	303	-
Stage 2	-	-	-	-	-	401	-

Approach	EB	WB	NB
HCM Control Delay, s	1.3	0.1	61.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	83	285	-	-	734	-
HCM Lane V/C Ratio	0.236	0.21	-	-	0.021	-
HCM Control Delay (s)	61.3	21	-	-	10	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	0.8	0.8	-	-	0.1	-

Intersection

Int Delay, s/veh 177.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	746	92	19	1018	364	133
Conflicting Peds, #/hr	0	2	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	90	-	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	811	100	21	1107	396	145

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	911
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.22
Pot Cap-1 Maneuver	-	-	743
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	742
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	\$ 845.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	117	551	-	-	742	-
HCM Lane V/C Ratio	3.382	0.262	-	-	0.028	-
HCM Control Delay (s)	\$ 1149.5	13.8	-	-	10	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	38.7	1	-	-	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	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	34	23	1	0	3	19	33	0	7	12	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	37	25	1	0	3	21	36	0	8	13	1
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.8	7.3	7.5
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	35%	59%	5%	58%
Vol Thru, %	60%	40%	35%	12%
Vol Right, %	5%	2%	60%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	58	55	127
LT Vol	7	34	3	74
Through Vol	12	23	19	15
RT Vol	1	1	33	38
Lane Flow Rate	22	63	60	138
Geometry Grp	1	1	1	1
Degree of Util (X)	0.026	0.076	0.065	0.157
Departure Headway (Hd)	4.294	4.366	3.911	4.099
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	821	809	899	866
Service Time	2.388	2.457	2.009	2.167
HCM Lane V/C Ratio	0.027	0.078	0.067	0.159
HCM Control Delay	7.5	7.8	7.3	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.2	0.2	0.6

Intersection

Intersection Delay, s/veh
 Intersection LOS

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	74	15	38
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	80	16	41
Number of Lanes	0	0	1	0

Approach SB

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

Lane

Intersection

Int Delay, s/veh 36.3

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	7	842	14	26	670	126	171
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	105	-	-	105	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	8	915	15	28	728	137	186

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	532	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	6.44	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.52	-	-
Pot Cap-1 Maneuver	661	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	661	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0.4	225.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	238	661	-	-	731	-
HCM Lane V/C Ratio	1.356	0.012	-	-	0.039	-
HCM Control Delay (s)	225.5	10.5	-	-	10.1	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	17.5	0	-	-	0.1	-

Notes

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

Intersection												
Int Delay, s/veh	2.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	21	0	62	4	3	103	4	1055	9	21	496	18
Conflicting Peds, #/hr	0	0	0	0	0	1	5	0	2	1	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	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	23	0	67	4	3	112	4	1147	10	23	539	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1180	1761	284	1476	1765	584	559	0	0	1158	0	0
Stage 1	595	595	-	1161	1161	-	-	-	-	-	-	-
Stage 2	585	1166	-	315	604	-	-	-	-	-	-	-
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	713	88	83	455	1008	-	-	599	-	-
Stage 1	458	491	-	208	268	-	-	-	-	-	-	-
Stage 2	464	266	-	671	486	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	101	78	710	75	77	453	1004	-	-	597	-	-
Mov Cap-2 Maneuver	101	78	-	75	77	-	-	-	-	-	-	-
Stage 1	453	464	-	206	265	-	-	-	-	-	-	-
Stage 2	340	263	-	571	459	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.8	20.9	0	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1004	-	-	281	344	597	-
HCM Lane V/C Ratio	0.004	-	-	0.321	0.348	0.038	-
HCM Control Delay (s)	8.6	0	-	23.8	20.9	11.3	0.3
HCM Lane LOS	A	A	-	C	C	B	A
HCM 95th %tile Q(veh)	0	-	-	1.3	1.5	0.1	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	0	-	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	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	1	1
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	4.12	7.12
Critical Hdwy Stg 1	-	-	-	6.12
Critical Hdwy Stg 2	-	-	-	6.12
Follow-up Hdwy	2.218	-	2.218	3.518
Pot Cap-1 Maneuver	-	-	1622	1022
Stage 1	-	-	-	1022
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	894
Mov Cap-2 Maneuver	-	-	-	894
Stage 1	-	-	-	1021
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-	1622	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-	0	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	4.14	-	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-	-

Intersection

Int Delay, s/veh -

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	0
Stage 1	-	-	0
Stage 2	-	-	0
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	-

Future Plus Project Plus Mitigation

ICU

Project Title: Duarte City of Hope
Intersection: 8 - I-605 NB Off-ramp & Live Oak Ave
Description: Future Plus Project with Mitigation

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	803	1,600	0.502 *	N-S(1): 0.484
	TH	0.00	0	0	0.000	N-S(2): 0.502 *
	LT	0.00	0	0	0.000	E-W(1): 0.115
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.469 *
	TH	2.00	1,500	3,200	0.469 *	V/C: 0.971
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	1.00	775	1,600	0.484	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 1.071
	LT	0.00	0	0	0.000 *	LOS: F
Eastbound	RT	0.00	0	0	0.000	
	TH	2.00	368	3,200	0.115	
	LT	0.00	0	0	0.000 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	760	1,600	0.475 *	N-S(1): 0.422
	TH	0.00	0	0	0.000	N-S(2): 0.475 *
	LT	0.00	0	0	0.000	E-W(1): 0.409 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.375
	TH	2.00	1,201	3,200	0.375	V/C: 0.884
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	1.00	675	1,600	0.422	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.984
	LT	0.00	0	0	0.000 *	LOS: E
Eastbound	RT	0.00	0	0	0.000	
	TH	2.00	1,310	3,200	0.409 *	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 16 - Buena Vista St & Village Rd
Description: Future Plus Project with Mitigation

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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): 0.385 * N-S(2): 0.077 E-W(1): 0.017 * E-W(2): 0.000
	TH	2.00	245	3,200	0.077	
	LT	1.00	178	1,600	0.111 *	
Westbound	RT	1.00	27	1,600	0.000	V/C: 0.402 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	27	1,600	0.017 *	
Northbound	RT	0.00	333	0	0.000	ICU: 0.502
	TH	2.00	544	3,200	0.274 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	LOS: A
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	

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): 0.193 * N-S(2): 0.181 E-W(1): 0.136 E-W(2): 0.137 *
	TH	2.00	567	3,200	0.177	
	LT	1.00	27	1,600	0.017 *	
Westbound	RT	1.00	232	1,600	0.137 *	V/C: 0.330 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	218	1,600	0.136	
Northbound	RT	0.00	29	0	0.000	ICU: 0.430
	TH	2.00	528	1,600	0.176 *	
	LT	0.00	6	1,600	0.004	
Eastbound	RT	0.00	0	0	0.000	LOS: A
	TH	0.00	0	0	0.000	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 17 - I-210 WB Off-ramp & Central Ave
Description: Future Plus Project with Mitigation

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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	7	1,600	0.004 *	N-S(1):	0.136
	TH	0.00	0	0	0.000	N-S(2):	0.256 *
	LT	0.00	0	0	0.000	E-W(1):	0.248
Westbound	RT	0.00	4	0	0.000	E-W(2):	0.353 *
	TH	1.00	555	1,600	0.349 *	V/C:	0.609
	LT	0.00	0	0	0.000	Lost Time:	0.100
Northbound	RT	1.00	218	1,600	0.136	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.709
	LT	1.00	403	1,600	0.252 *	LOS:	C
Eastbound	RT	0.00	0	0	0.000		
	TH	1.00	389	1,600	0.248		
	LT	0.00	7	1,600	0.004 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.92	23	1,472	0.012 *	N-S(1):	0.145
	TH	0.00	0	0	0.000	N-S(2):	0.267 *
	LT	0.08	2	128	0.016	E-W(1):	0.276 *
Westbound	RT	0.00	4	0	0.000	E-W(2):	0.227
	TH	1.00	347	1,600	0.219	V/C:	0.543
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	1.00	206	1,600	0.129	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.643
	LT	1.00	408	1,600	0.255 *	LOS:	B
Eastbound	RT	0.00	0	0	0.000		
	TH	1.00	429	1,600	0.276 *		
	LT	0.00	12	1,600	0.008		

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 19 - Village Rd & Duarte Rd
Description: Future Plus Project with Mitigation

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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): 0.049 *
	LT	0.00	0	0	0.000	E-W(1): 0.527 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.225
	TH	2.00	721	3,200	0.225	V/C: 0.576
	LT	1.00	143	1,600	0.089 *	Lost Time: 0.100
Northbound	RT	1.00	11	1,600	0.000	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.676
	LT	1.00	78	1,600	0.049 *	LOS: B
Eastbound	RT	0.00	359	0	0.000	
	TH	2.00	1,044	3,200	0.438 *	
	LT	0.00	0	0	0.000	

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): 0.077
	TH	0.00	0	0	0.000 *	N-S(2): 0.228 *
	LT	0.00	0	0	0.000	E-W(1): 0.274
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.318 *
	TH	2.00	1,018	3,200	0.318 *	V/C: 0.546
	LT	1.00	19	1,600	0.012	Lost Time: 0.100
Northbound	RT	1.00	133	1,600	0.077	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.646
	LT	1.00	364	1,600	0.228 *	LOS: B
Eastbound	RT	0.00	92	0	0.000	
	TH	2.00	746	3,200	0.262	
	LT	0.00	0	0	0.000 *	

* - Denotes critical movement

Project Title: Duarte City of Hope
Intersection: 22 - Circle Rd/Employee Driveway & Duarte Rd
Description: Future Plus Project with Mitigation

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

N-S Split Phase : N
 E-W Split Phase : N
 Lost Time (% of cycle) : 10
 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):	0.018 *
	LT	0.00	0	0	0.000	E-W(1):	0.399 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.269
	TH	2.00	857	3,200	0.268	V/C:	0.417
	LT	1.00	234	1,600	0.146 *	Lost Time:	0.100
Northbound	RT	0.64	18	1,029	0.000	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.517
	LT	0.36	10	571	0.018 *	LOS:	A
Eastbound	RT	0.00	125	0	0.000		
	TH	2.00	685	3,200	0.253 *		
	LT	1.00	1	1,600	0.001		

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):	0.178
	TH	0.00	0	0	0.000 *	N-S(2):	0.186 *
	LT	0.00	0	0	0.000	E-W(1):	0.284 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.213
	TH	2.00	670	3,200	0.209	V/C:	0.470
	LT	1.00	26	1,600	0.016 *	Lost Time:	0.100
Northbound	RT	0.58	171	921	0.178	ITS:	0.000
	TH	0.00	0	0	0.000	ICU:	0.570
	LT	0.42	126	679	0.186 *	LOS:	A
Eastbound	RT	0.00	14	0	0.000		
	TH	2.00	842	3,200	0.268 *		
	LT	1.00	7	1,600	0.004		

* - Denotes critical movement

APPENDIX E: SIGNAL WARRANT ANALYSIS



Existing

AM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Live Oak Ave			
Minor Street: I-605 NB Off-Ramps			
Scenario: EX AM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	321	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,250</u>	Minor Street (Higher Volume App.):	<u>615</u>
Major Street Total (Both Approaches):	1,571	Minor Street Total:	615
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	140
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	3 Ranch Road		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	559	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>662</u>	Minor Street (Higher Volume App.):	<u>53</u>
Major Street Total (Both Approaches):	1,221	Minor Street Total:	53
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	210
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	Village Road		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	636	Major Street Left Turn (see note [b]):	73
Major Street (Approach 2):	<u>260</u>	Minor Street (Higher Volume App.):	<u>30</u>
Major Street Total (Both Approaches):	896	Minor Street Total:	103
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	420
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Central Avenue		
Minor Street:	I-210 Westbound Off-Ramp		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	352	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	498	Minor Street (Higher Volume App.):	351
Major Street Total (Both Approaches):	850	Minor Street Total:	351
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	450
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	801	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	474	Minor Street (Higher Volume App.):	28
Major Street Total (Both Approaches):	1,275	Minor Street Total:	28
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	200
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	759	Major Street Left Turn (see note [b]):	97
Major Street (Approach 2):	<u>526</u>	Minor Street (Higher Volume App.):	<u>56</u>
Major Street Total (Both Approaches):	1,285	Minor Street Total:	153
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	250
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	38	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	93	Minor Street (Higher Volume App.):	98
Major Street Total (Both Approaches):	131	Minor Street Total:	98
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	710
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	416	Major Street Left Turn (see note [b]):	205
Major Street (Approach 2):	<u>722</u>	Minor Street (Higher Volume App.):	<u>20</u>
Major Street Total (Both Approaches):	1,138	Minor Street Total:	225
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	230
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Highland Avenue		
Minor Street:	Evergreen Street		
Scenario:	EX AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	305	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	885	Minor Street (Higher Volume App.):	74
Major Street Total (Both Approaches):	1,190	Minor Street Total:	74
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	220
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

PM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Live Oak Ave		
Minor Street:	I-605 NB Off-Ramps		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,146	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	964	Minor Street (Higher Volume App.):	518
Major Street Total (Both Approaches):	2,110	Minor Street Total:	518
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	3 Ranch Road		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	926	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	443	Minor Street (Higher Volume App.):	52
Major Street Total (Both Approaches):	1,369	Minor Street Total:	52
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	170
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	Village Road		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	408	Major Street Left Turn (see note [b]):	8
Major Street (Approach 2):	<u>417</u>	Minor Street (Higher Volume App.):	<u>296</u>
Major Street Total (Both Approaches):	825	Minor Street Total:	304
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	460
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Central Avenue		
Minor Street:	I-210 Westbound Off-Ramp		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	371	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>307</u>	Minor Street (Higher Volume App.):	<u>405</u>
Major Street Total (Both Approaches):	678	Minor Street Total:	405
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	560
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	581	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>729</u>	Minor Street (Higher Volume App.):	<u>17</u>
Major Street Total (Both Approaches):	1,310	Minor Street Total:	17
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	190
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	522	Major Street Left Turn (see note [b]):	12
Major Street (Approach 2):	<u>508</u>	Minor Street (Higher Volume App.):	<u>311</u>
Major Street Total (Both Approaches):	1,030	Minor Street Total:	323
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	350
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	53	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>50</u>	Minor Street (Higher Volume App.):	<u>69</u>
Major Street Total (Both Approaches):	103	Minor Street Total:	69
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	740
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	546	Major Street Left Turn (see note [b]):	23
Major Street (Approach 2):	<u>296</u>	Minor Street (Higher Volume App.):	<u>237</u>
Major Street Total (Both Approaches):	842	Minor Street Total:	260
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	340
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Highland Avenue		
Minor Street:	Evergreen Street		
Scenario:	EX PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	721	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>281</u>	Minor Street (Higher Volume App.):	<u>100</u>
Major Street Total (Both Approaches):	1,002	Minor Street Total:	100
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	280
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

Existing Plus Project

AM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Live Oak Ave Minor Street: I-605 NB Off-Ramps Scenario: EXPP AM Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	321	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,250</u>	Minor Street (Higher Volume App.):	<u>615</u>
Major Street Total (Both Approaches):	1,571	Minor Street Total:	615
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	140
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	3 Ranch Road		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	597	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>889</u>	Minor Street (Higher Volume App.):	<u>53</u>
Major Street Total (Both Approaches):	1,486	Minor Street Total:	53
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	150
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	Village Road		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	750	Major Street Left Turn (see note [b]):	169
Major Street (Approach 2):	<u>368</u>	Minor Street (Higher Volume App.):	<u>51</u>
Major Street Total (Both Approaches):	1,118	Minor Street Total:	220
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	320
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Central Avenue		
Minor Street:	I-210 Westbound Off-Ramp		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	352	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>498</u>	Minor Street (Higher Volume App.):	<u>441</u>
Major Street Total (Both Approaches):	850	Minor Street Total:	441
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	450
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,049	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	517	Minor Street (Higher Volume App.):	28
Major Street Total (Both Approaches):	1,566	Minor Street Total:	28
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	140
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,007	Major Street Left Turn (see note [b]):	133
Major Street (Approach 2):	<u>582</u>	Minor Street (Higher Volume App.):	<u>83</u>
Major Street Total (Both Approaches):	1,589	Minor Street Total:	216
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	170
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	38	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	93	Minor Street (Higher Volume App.):	98
Major Street Total (Both Approaches):	131	Minor Street Total:	98
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	710
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	454	Major Street Left Turn (see note [b]):	213
Major Street (Approach 2):	<u>789</u>	Minor Street (Higher Volume App.):	<u>25</u>
Major Street Total (Both Approaches):	1,243	Minor Street Total:	238
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	200
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Highland Avenue		
Minor Street:	Evergreen Street		
Scenario:	EXPP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	313	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>952</u>	Minor Street (Higher Volume App.):	<u>74</u>
Major Street Total (Both Approaches):	1,265	Minor Street Total:	74
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	200
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

PM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Live Oak Ave		
Minor Street:	I-605 NB Off-Ramps		
Scenario:	EXPP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,146	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	964	Minor Street (Higher Volume App.):	518
Major Street Total (Both Approaches):	2,110	Minor Street Total:	518
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	3 Ranch Road		
Scenario:	EXPP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,143	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	480	Minor Street (Higher Volume App.):	52
Major Street Total (Both Approaches):	1,623	Minor Street Total:	52
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	130
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	Village Road		
Scenario:	EXPP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	426	Major Street Left Turn (see note [b]):	24
Major Street (Approach 2):	<u>500</u>	Minor Street (Higher Volume App.):	<u>416</u>
Major Street Total (Both Approaches):	926	Minor Street Total:	440
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	410
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Central Avenue			
Minor Street: I-210 Westbound Off-Ramp			
Scenario: EXPP PM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	371	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>307</u>	Minor Street (Higher Volume App.):	<u>420</u>
Major Street Total (Both Approaches):	678	Minor Street Total:	420
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	560
PEAK HOUR VOLUME WARRANT SATISFIED?		NO	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	EXPP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	623	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	965	Minor Street (Higher Volume App.):	17
Major Street Total (Both Approaches):	1,588	Minor Street Total:	17
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	130
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	EXPP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	564	Major Street Left Turn (see note [b]):	18
Major Street (Approach 2):	<u>623</u>	Minor Street (Higher Volume App.):	<u>463</u>
Major Street Total (Both Approaches):	1,187	Minor Street Total:	481
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	290
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	EXPP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	53	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>50</u>	Minor Street (Higher Volume App.):	<u>69</u>
Major Street Total (Both Approaches):	103	Minor Street Total:	69
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	740
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	EXPP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	592	Major Street Left Turn (see note [b]):	24
Major Street (Approach 2):	<u>307</u>	Minor Street (Higher Volume App.):	<u>272</u>
Major Street Total (Both Approaches):	899	Minor Street Total:	296
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	320
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street: Highland Avenue
 Minor Street: Evergreen Street
 Scenario: EXPP PM
 Urban/Rural: u (U=urban, R=rural [a])

FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)

Number of Lanes on Each Approach

Major Street: #N/A
 Minor Street: #N/A

Vehicles Per Hour (4th Highest Hour)

Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A

Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
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FOUR HOUR VOLUME WARRANT SATISFIED? **#N/A**

PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Number of Lanes on Each Approach

Major Street: 2
 Minor Street: 1

Vehicles Per Hour (Peak Hour)

Major Street (Approach 1):	767	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>292</u>	Minor Street (Higher Volume App.):	<u>100</u>
Major Street Total (Both Approaches):	1,059	Minor Street Total:	100

Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	260
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PEAK HOUR VOLUME WARRANT SATISFIED? **NO**

Notes:

- May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

Future

AM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Live Oak Ave			
Minor Street: I-605 NB Off-Ramps			
Scenario: FUT AM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	368	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,500</u>	Minor Street (Higher Volume App.):	<u>775</u>
Major Street Total (Both Approaches):	1,868	Minor Street Total:	775
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	3 Ranch Road		
Scenario:	FUT AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	791	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>889</u>	Minor Street (Higher Volume App.):	<u>60</u>
Major Street Total (Both Approaches):	1,680	Minor Street Total:	60
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	120
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	Village Road		
Scenario:	FUT AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	763	Major Street Left Turn (see note [b]):	82
Major Street (Approach 2):	315	Minor Street (Higher Volume App.):	33
Major Street Total (Both Approaches):	1,078	Minor Street Total:	115
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	330
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Central Avenue			
Minor Street: I-210 Westbound Off-Ramp			
Scenario: FUT AM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	396	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>559</u>	Minor Street (Higher Volume App.):	<u>531</u>
Major Street Total (Both Approaches):	955	Minor Street Total:	531
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	390
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	FUT AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,202	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>750</u>	Minor Street (Higher Volume App.):	<u>31</u>
Major Street Total (Both Approaches):	1,952	Minor Street Total:	31
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	FUT AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,155	Major Street Left Turn (see note [b]):	107
Major Street (Approach 2):	<u>808</u>	Minor Street (Higher Volume App.):	<u>62</u>
Major Street Total (Both Approaches):	1,963	Minor Street Total:	169
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	150
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	43	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>115</u>	Minor Street (Higher Volume App.):	<u>108</u>
Major Street Total (Both Approaches):	158	Minor Street Total:	108
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	680
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	FUT AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	773	Major Street Left Turn (see note [b]):	226
Major Street (Approach 2):	<u>1,024</u>	Minor Street (Higher Volume App.):	<u>23</u>
Major Street Total (Both Approaches):	1,797	Minor Street Total:	249
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Highland Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	442	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,369</u>	Minor Street (Higher Volume App.):	<u>94</u>
Major Street Total (Both Approaches):	1,811	Minor Street Total:	94
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

PM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Live Oak Ave			
Minor Street: I-605 NB Off-Ramps			
Scenario: FUT PM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,310	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,201</u>	Minor Street (Higher Volume App.):	<u>748</u>
Major Street Total (Both Approaches):	2,511	Minor Street Total:	748
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Buena Vista Street			
Minor Street: 3 Ranch Road			
Scenario: FUT PM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,316	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>627</u>	Minor Street (Higher Volume App.):	<u>61</u>
Major Street Total (Both Approaches):	1,943	Minor Street Total:	61
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?		NO	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	Village Road		
Scenario:	FUT PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	545	Major Street Left Turn (see note [b]):	11
Major Street (Approach 2):	<u>511</u>	Minor Street (Higher Volume App.):	<u>330</u>
Major Street Total (Both Approaches):	1,056	Minor Street Total:	341
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	340
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Central Avenue			
Minor Street: I-210 Westbound Off-Ramp			
Scenario: FUT PM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	441	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>351</u>	Minor Street (Higher Volume App.):	<u>599</u>
Major Street Total (Both Approaches):	792	Minor Street Total:	599
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	480
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	FUT PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	861	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,168</u>	Minor Street (Higher Volume App.):	<u>18</u>
Major Street Total (Both Approaches):	2,029	Minor Street Total:	18
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	FUT PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	796	Major Street Left Turn (see note [b]):	13
Major Street (Approach 2):	<u>922</u>	Minor Street (Higher Volume App.):	<u>345</u>
Major Street Total (Both Approaches):	1,718	Minor Street Total:	358
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	150
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	20	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>127</u>	Minor Street (Higher Volume App.):	<u>58</u>
Major Street Total (Both Approaches):	147	Minor Street Total:	58
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	700
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	FUT PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	817	Major Street Left Turn (see note [b]):	25
Major Street (Approach 2):	<u>685</u>	Minor Street (Higher Volume App.):	<u>262</u>
Major Street Total (Both Approaches):	1,502	Minor Street Total:	287
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	150
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Highland Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,022	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	524	Minor Street (Higher Volume App.):	110
Major Street Total (Both Approaches):	1,546	Minor Street Total:	110
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	140
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

Future Plus Project

AM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Live Oak Ave			
Minor Street: I-605 NB Off-Ramps			
Scenario: FUT PP AM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	368	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,500</u>	Minor Street (Higher Volume App.):	<u>803</u>
Major Street Total (Both Approaches):	1,868	Minor Street Total:	803
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	3 Ranch Road		
Scenario:	FUT PP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	829	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,116</u>	Minor Street (Higher Volume App.):	<u>60</u>
Major Street Total (Both Approaches):	1,945	Minor Street Total:	60
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Buena Vista Street		
Minor Street:	Village Road		
Scenario:	FUT PP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	877	Major Street Left Turn (see note [b]):	178
Major Street (Approach 2):	423	Minor Street (Higher Volume App.):	54
Major Street Total (Both Approaches):	1,300	Minor Street Total:	232
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	250
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Central Avenue			
Minor Street: I-210 Westbound Off-Ramp			
Scenario: FUT PP AM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	396	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>559</u>	Minor Street (Higher Volume App.):	<u>621</u>
Major Street Total (Both Approaches):	955	Minor Street Total:	621
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	390
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	FUT PP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,450	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>793</u>	Minor Street (Higher Volume App.):	<u>31</u>
Major Street Total (Both Approaches):	2,243	Minor Street Total:	31
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	FUT PP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,403	Major Street Left Turn (see note [b]):	143
Major Street (Approach 2):	864	Minor Street (Higher Volume App.):	89
Major Street Total (Both Approaches):	2,267	Minor Street Total:	232
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	150
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT PP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	43	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>115</u>	Minor Street (Higher Volume App.):	<u>108</u>
Major Street Total (Both Approaches):	158	Minor Street Total:	108
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	680
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	FUT PP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	811	Major Street Left Turn (see note [b]):	234
Major Street (Approach 2):	<u>1,091</u>	Minor Street (Higher Volume App.):	<u>28</u>
Major Street Total (Both Approaches):	1,902	Minor Street Total:	262
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Highland Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT PP AM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	450	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,436</u>	Minor Street (Higher Volume App.):	<u>94</u>
Major Street Total (Both Approaches):	1,886	Minor Street Total:	94
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

PM

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Live Oak Ave			
Minor Street: I-605 NB Off-Ramps			
Scenario: FUT PP PM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,310	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,201</u>	Minor Street (Higher Volume App.):	<u>760</u>
Major Street Total (Both Approaches):	2,511	Minor Street Total:	760
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Buena Vista Street		
Minor Street:	3 Ranch Road		
Scenario:	FUT PP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,533	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	664	Minor Street (Higher Volume App.):	61
Major Street Total (Both Approaches):	2,197	Minor Street Total:	61
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Buena Vista Street			
Minor Street: Village Road			
Scenario: FUT PP PM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	563	Major Street Left Turn (see note [b]):	27
Major Street (Approach 2):	<u>594</u>	Minor Street (Higher Volume App.):	<u>450</u>
Major Street Total (Both Approaches):	1,157	Minor Street Total:	477
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	300
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street: Central Avenue			
Minor Street: I-210 Westbound Off-Ramp			
Scenario: FUT PP PM			
Urban/Rural: u (U=urban, R=rural [a])			
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?		#N/A	
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	441	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>351</u>	Minor Street (Higher Volume App.):	<u>614</u>
Major Street Total (Both Approaches):	792	Minor Street Total:	614
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	480
PEAK HOUR VOLUME WARRANT SATISFIED?		YES	

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Cinco Roberts Drive		
Scenario:	FUT PP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	903	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	<u>1,404</u>	Minor Street (Higher Volume App.):	<u>18</u>
Major Street Total (Both Approaches):	2,307	Minor Street Total:	18
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	100
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Village Road		
Scenario:	FUT PP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	2		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	838	Major Street Left Turn (see note [b]):	19
Major Street (Approach 2):	<u>1,037</u>	Minor Street (Higher Volume App.):	<u>497</u>
Major Street Total (Both Approaches):	1,875	Minor Street Total:	516
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	620	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	150
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duncannon Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT PP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	1		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	20	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	127	Minor Street (Higher Volume App.):	58
Major Street Total (Both Approaches):	147	Minor Street Total:	58
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	450	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	700
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

**TRAFFIC SIGNAL WARRANTS
 FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
 PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)**

Major Street:	Duarte Road		
Minor Street:	Circle Road		
Scenario:	FUT PP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	863	Major Street Left Turn (see note [b]):	26
Major Street (Approach 2):	<u>696</u>	Minor Street (Higher Volume App.):	<u>297</u>
Major Street Total (Both Approaches):	1,559	Minor Street Total:	323
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	140
PEAK HOUR VOLUME WARRANT SATISFIED?	YES		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

TRAFFIC SIGNAL WARRANTS
FOUR HOUR VEHICULAR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)
PEAK HOUR VEHICULAR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)

Major Street:	Highland Avenue		
Minor Street:	Evergreen Street		
Scenario:	FUT PP PM		
Urban/Rural:	u	(U=urban, R=rural [a])	
FOUR HOUR VOLUME (MUTCD Warrant 2, Caltrans Warrant 9)			
Number of Lanes on Each Approach			
Major Street:	#N/A		
Minor Street:	#N/A		
Vehicles Per Hour (4th Highest Hour)			
Major Street (Approach 1):	#N/A	Major Street Left Turn (see note [b]):	#N/A
Major Street (Approach 2):	#N/A	Minor Street (Higher Volume App.):	#N/A
Major Street Total (Both Approaches):	#N/A	Minor Street Total:	#N/A
Minimum Volume on Major Street to Satisfy Warrant (see note [c]):	#N/A	Minimum Volume on Minor Street to Satisfy Warrant (see note [c]):	#N/A
FOUR HOUR VOLUME WARRANT SATISFIED?	#N/A		
PEAK HOUR VOLUME (MUTCD Warrant 3, Caltrans Warrant 11)			
Number of Lanes on Each Approach			
Major Street:	2		
Minor Street:	1		
Vehicles Per Hour (Peak Hour)			
Major Street (Approach 1):	1,068	Major Street Left Turn (see note [b]):	0
Major Street (Approach 2):	535	Minor Street (Higher Volume App.):	110
Major Street Total (Both Approaches):	1,603	Minor Street Total:	110
Minimum Volume on Major Street to Satisfy Warrant (see note [d]):	510	Minimum Volume on Minor Street to Satisfy Warrant (see note [d]):	130
PEAK HOUR VOLUME WARRANT SATISFIED?	NO		

Notes:

- a. May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000.
- b. Heavier left-turn movement from the major street may be included with minor street volume if a separate signal phase is proposed for left-turn movements.
- c. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-1.
- d. From: USDOT, FHWA, "Manual on Uniform Traffic Control Devices," 2001, Figure 4C-3.

Adopted from: U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices, Millennium Edition," 2001; and Caltrans, "Traffic Manual," 2002.

APPENDIX F: FREEWAY OFF-RAMP QUEUING ANALYSIS



Existing

AM

Intersection												
Int Delay, s/veh	47.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	321	0	0	1250	0	0	0	615	0	0	507
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	349	0	0	1359	0	0	0	668	0	0	551

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1359	0	0	349	0	0	1028	1708	174	1533	1708	679
Stage 1	-	-	-	-	-	-	349	349	-	1359	1359	-
Stage 2	-	-	-	-	-	-	679	1359	-	174	349	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	502	-	-	1207	-	-	188	90	839	80	90	~ 394
Stage 1	-	-	-	-	-	-	640	632	-	157	215	-
Stage 2	-	-	-	-	-	-	408	215	-	811	632	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	502	-	-	1207	-	-	-	90	839	16	90	~ 394
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	90	-	16	90	-
Stage 1	-	-	-	-	-	-	640	632	-	157	215	-
Stage 2	-	-	-	-	-	-	-	215	-	165	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	23.8	221.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	502	-	-	1207	-	-	394
HCM Lane V/C Ratio	0.797	-	-	-	-	-	-	1.399
HCM Control Delay (s)	23.8	0	-	-	0	-	-	221.3
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	8.4	0	-	-	0	-	-	27.2

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

Queues
9: Arrow Hwy & I-605 SB Off-Ramp



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	520	1807	396	594
v/c Ratio	0.17	0.87	0.76	0.38
Control Delay	7.4	19.6	31.6	0.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.4	19.6	31.6	0.7
Queue Length 50th (ft)	31	293	145	0
Queue Length 95th (ft)	62	#593	234	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2981	2074	744	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.17	0.87	0.53	0.38

Intersection Summary

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

Queues
13: Evergreen St & Buena Vista St

Duarte City of Hope
Existing AM

	→	↑	↗	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	722	440	220	260	467
v/c Ratio	0.59	0.27	0.26	0.61	0.29
Control Delay	8.8	6.7	2.0	14.9	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.8	6.7	2.0	14.9	6.8
Queue Length 50th (ft)	28	25	0	35	27
Queue Length 95th (ft)	85	51	18	92	54
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	1843	2981	1368	780	2981
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	0.39	0.15	0.16	0.33	0.16
Intersection Summary					

Intersection												
Int Delay, s/veh	46.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	346	0	0	494	4	285	0	66	0	0	6
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									
Storage Length	-	-	-	-	-	-	0	-	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	376	0	0	537	4	310	0	72	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	541	0	0	376	0	0	931	930	376	928	928	539
Stage 1	-	-	-	-	-	-	389	389	-	539	539	-
Stage 2	-	-	-	-	-	-	542	541	-	389	389	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1028	-	-	1182	-	-	~ 247	267	670	248	268	542
Stage 1	-	-	-	-	-	-	635	608	-	527	522	-
Stage 2	-	-	-	-	-	-	525	521	-	635	608	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1028	-	-	1182	-	-	~ 242	265	670	220	266	542
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 242	265	-	220	266	-
Stage 1	-	-	-	-	-	-	629	603	-	522	522	-
Stage 2	-	-	-	-	-	-	519	521	-	562	603	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	160.3	11.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	670	1028	-	-	1182	-	-	542
HCM Lane V/C Ratio	1.28	0.107	0.006	-	-	-	-	-	0.012
HCM Control Delay (s)	194.9	11	8.5	0	-	0	-	-	11.7
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	15.8	0.4	0	-	-	0	-	-	0

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

Queues
 27: I-605 NB Off-ramp/Mount Olive Dr & Huntington Dr

Duarte City of Hope
 Existing AM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	63	251	273	417	1265	134	541	556	307	59	410
v/c Ratio	0.98	0.49	0.59	0.99	1.03	0.22	0.98	0.99	0.43	0.24	0.81
Control Delay	160.7	46.6	10.8	84.5	69.1	10.8	70.6	73.1	5.7	44.4	55.7
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	160.7	46.6	10.8	84.5	69.1	10.8	70.6	73.1	5.7	44.4	55.7
Queue Length 50th (ft)	45	86	0	296	~506	21	396	409	6	37	137
Queue Length 95th (ft)	#135	128	75	#499	#642	65	#633	#651	67	77	#205
Internal Link Dist (ft)		1167			1277			883			1067
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	64	517	464	421	1230	608	553	562	719	259	526
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	0.98	0.49	0.59	0.99	1.03	0.22	0.98	0.99	0.43	0.23	0.78

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.

PM

Intersection												
Int Delay, s/veh	42.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1146	0	0	964	0	0	0	518	0	0	472
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1246	0	0	1048	0	0	0	563	0	0	513

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1048	0	0	1246	0	0	1770	2294	623	1671	2294	524
Stage 1	-	-	-	-	-	-	1246	1246	-	1048	1048	-
Stage 2	-	-	-	-	-	-	524	1048	-	623	1246	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	660	-	-	554	-	-	53	39 ~ 429		63	39 ~ 498	
Stage 1	-	-	-	-	-	-	184	244	-	244	303	-
Stage 2	-	-	-	-	-	-	504	303	-	440	244	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	660	-	-	554	-	-	-	39 ~ 429		-	39 ~ 498	
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	39	-	-	39	-
Stage 1	-	-	-	-	-	-	184	244	-	244	303	-
Stage 2	-	-	-	-	-	-	-	303	-	-	244	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	183.2	77.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	660	-	-	554	-	-	498
HCM Lane V/C Ratio	1.312	-	-	-	-	-	-	1.03
HCM Control Delay (s)	183.2	0	-	-	0	-	-	77.3
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	25.2	0	-	-	0	-	-	14.8

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

Queues
9: Arrow Hwy & I-605 SB Off-Ramp

Duarte City of Hope
Existing PM



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1296	448	246	251
v/c Ratio	0.55	0.28	0.47	0.16
Control Delay	8.0	6.6	12.9	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.0	6.6	12.9	0.2
Queue Length 50th (ft)	52	22	36	0
Queue Length 95th (ft)	102	51	74	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2498	1738	869	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.26	0.28	0.16

Intersection Summary

Queues
13: Evergreen St & Buena Vista St

Duarte City of Hope
Existing PM

	→	↑	↗	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	854	706	412	275	524
v/c Ratio	0.77	0.39	0.47	0.83	0.29
Control Delay	23.4	7.8	6.7	33.6	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.4	7.8	6.7	33.6	7.1
Queue Length 50th (ft)	128	61	44	63	42
Queue Length 95th (ft)	#202	80	77	#166	58
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	1222	2513	1163	461	2513
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	0.28	0.35	0.60	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	30.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	360	0	0	303	4	302	0	103	2	0	21
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									
Storage Length	-	-	-	-	-	-	0	-	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	12	391	0	0	329	4	328	0	112	2	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	334	0	0	391	0	0	758	749	391	747	747	332
Stage 1	-	-	-	-	-	-	415	415	-	332	332	-
Stage 2	-	-	-	-	-	-	343	334	-	415	415	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1225	-	-	1168	-	-	~ 324	341	658	329	341	710
Stage 1	-	-	-	-	-	-	615	592	-	681	644	-
Stage 2	-	-	-	-	-	-	672	643	-	615	592	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1225	-	-	1168	-	-	~ 310	337	658	270	337	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 310	337	-	270	337	-
Stage 1	-	-	-	-	-	-	607	584	-	672	644	-
Stage 2	-	-	-	-	-	-	650	643	-	504	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	81.5	11
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	658	1225	-	-	1168	-	-	622
HCM Lane V/C Ratio	1.059	0.17	0.01	-	-	-	-	-	0.04
HCM Control Delay (s)	105.4	11.6	8	0	-	0	-	-	11
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	12.3	0.6	0	-	-	0	-	-	0.1

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

Queues
27: I-605 NB Off-ramp/Mt Olive Dr & Huntington Dr

Duarte City of Hope
Existing PM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	49	849	682	285	435	39	235	242	733	85	364
v/c Ratio	0.12	0.49	0.61	1.31	0.25	0.05	0.49	0.48	1.26	0.37	0.80
Control Delay	18.1	22.1	3.9	198.9	18.6	4.2	39.9	39.5	156.2	52.8	62.8
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	18.1	22.1	3.9	198.9	18.6	4.2	39.9	39.5	156.2	52.8	62.8
Queue Length 50th (ft)	20	228	0	~285	101	0	160	164	~604	61	140
Queue Length 95th (ft)	45	285	61	#459	136	16	245	250	#844	112	#203
Internal Link Dist (ft)		1195			1297			721			583
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	413	1720	1120	217	1720	792	479	500	584	237	475
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	0.12	0.49	0.61	1.31	0.25	0.05	0.49	0.48	1.26	0.36	0.77

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.

Existing Plus Project

AM

Intersection												
Int Delay, s/veh	69.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	321	0	0	1250	0	0	0	615	0	0	581
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	349	0	0	1359	0	0	0	668	0	0	632

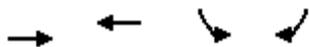
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1359	0	0	349	0	0	1028	1708	174	1533	1708	679
Stage 1	-	-	-	-	-	-	349	349	-	1359	1359	-
Stage 2	-	-	-	-	-	-	679	1359	-	174	349	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	502	-	-	1207	-	-	188	90	839	80	90	~ 394
Stage 1	-	-	-	-	-	-	640	632	-	157	215	-
Stage 2	-	-	-	-	-	-	408	215	-	811	632	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	502	-	-	1207	-	-	-	90	839	16	90	~ 394
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	90	-	16	90	-
Stage 1	-	-	-	-	-	-	640	632	-	157	215	-
Stage 2	-	-	-	-	-	-	-	215	-	165	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	23.8	\$ 307.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	839	502	-	-	1207	-	-	394
HCM Lane V/C Ratio	0.797	-	-	-	-	-	-	1.603
HCM Control Delay (s)	23.8	0	-	-	0	-	-	\$ 307.9
HCM Lane LOS	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	8.4	0	-	-	0	-	-	36.2

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

Queues
9: Arrow Hwy & I-605 SB Off-Ramp



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	525	1840	396	594
v/c Ratio	0.18	0.89	0.76	0.38
Control Delay	7.4	20.7	31.6	0.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	7.4	20.7	31.6	0.7
Queue Length 50th (ft)	32	304	145	0
Queue Length 95th (ft)	62	#610	234	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2981	2074	744	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.89	0.53	0.38

Intersection Summary

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

Queues
 13: Evergreen St & Buena Vista St



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	857	467	239	260	606
v/c Ratio	0.68	0.29	0.28	0.63	0.38
Control Delay	12.7	7.6	2.1	16.8	8.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	7.6	2.1	16.8	8.1
Queue Length 50th (ft)	57	35	0	46	48
Queue Length 95th (ft)	136	54	19	94	71
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	1592	2789	1298	710	2789
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	0.54	0.17	0.18	0.37	0.22

Intersection Summary

Intersection													
Int Delay, s/veh	92.2												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	346	0	0	494	4	359	0	82	0	0	6
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									
Storage Length	-	-	-	-	-	-	0	-	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	376	0	0	537	4	390	0	89	0	0	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	541	0	0	376	0	0	931	930	376	928	928	539
Stage 1	-	-	-	-	-	-	389	389	-	539	539	-
Stage 2	-	-	-	-	-	-	542	541	-	389	389	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1028	-	-	1182	-	-	~ 247	267	670	248	268	542
Stage 1	-	-	-	-	-	-	635	608	-	527	522	-
Stage 2	-	-	-	-	-	-	525	521	-	635	608	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1028	-	-	1182	-	-	~ 242	265	670	214	266	542
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 242	265	-	214	266	-
Stage 1	-	-	-	-	-	-	629	603	-	522	522	-
Stage 2	-	-	-	-	-	-	519	521	-	546	603	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	271	11.7
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	670	1028	-	-	1182	-	-	542
HCM Lane V/C Ratio	1.612	0.133	0.006	-	-	-	-	-	0.012
HCM Control Delay (s)	\$ 330.3	11.2	8.5	0	-	0	-	-	11.7
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	24.5	0.5	0	-	-	0	-	-	0

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

Queues
 27: I-605 NB Off-ramp/Mount Olive Dr & Huntington Dr

Duarte City of Hope
 Existing Plus Project AM



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	63	254	278	417	1285	134	564	574	307	59	410
v/c Ratio	0.98	0.49	0.59	0.99	1.04	0.22	1.02	1.02	0.43	0.24	0.81
Control Delay	160.7	46.7	10.8	84.5	73.8	10.8	80.5	81.0	6.3	44.4	55.7
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	160.7	46.7	10.8	84.5	73.8	10.8	80.5	81.0	6.3	44.4	55.7
Queue Length 50th (ft)	45	87	0	296	-522	21	-448	-456	10	37	137
Queue Length 95th (ft)	#135	130	77	#499	#657	65	#671	#682	73	77	#205
Internal Link Dist (ft)		1167			1277			883			1067
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	64	517	468	421	1230	608	553	562	713	259	526
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	0.98	0.49	0.59	0.99	1.04	0.22	1.02	1.02	0.43	0.23	0.78

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.

PM

Intersection

Int Delay, s/veh 43.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1146	0	0	964	0	0	0	518	0	0	484
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1246	0	0	1048	0	0	0	563	0	0	526

Major/Minor	Major1	Major2	Minor1	Minor2							
Conflicting Flow All	1048	0	0	1770	2294	623	1671	2294	524		
Stage 1	-	-	-	1246	1246	-	1048	1048	-		
Stage 2	-	-	-	524	1048	-	623	1246	-		
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94		
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-		
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-		
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32		
Pot Cap-1 Maneuver	660	-	-	554	-	-	53	39 ~ 429	63	39 ~ 498	
Stage 1	-	-	-	-	-	-	184	244	-	244	303
Stage 2	-	-	-	-	-	-	504	303	-	440	244
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	660	-	-	554	-	-	-	39 ~ 429	-	39 ~ 498	
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	39	-	39	
Stage 1	-	-	-	-	-	-	184	244	-	244	303
Stage 2	-	-	-	-	-	-	-	303	-	-	244

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	183.2	84.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	660	-	-	554	-	-	498
HCM Lane V/C Ratio	1.312	-	-	-	-	-	-	1.056
HCM Control Delay (s)	183.2	0	-	-	0	-	-	84.9
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	25.2	0	-	-	0	-	-	15.9

Notes

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

Queues
 9: Arrow Hwy & I-605 SB Off-Ramp



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1325	453	246	251
v/c Ratio	0.57	0.28	0.47	0.16
Control Delay	8.1	6.6	12.9	0.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.1	6.6	12.9	0.2
Queue Length 50th (ft)	53	22	36	0
Queue Length 95th (ft)	105	52	74	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2496	1737	868	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.53	0.26	0.28	0.16
Intersection Summary				

Queues
 13: Evergreen St & Buena Vista St



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	877	863	516	275	547
v/c Ratio	0.86	0.43	0.54	0.92	0.27
Control Delay	30.7	7.8	7.9	52.0	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	7.8	7.9	52.0	6.7
Queue Length 50th (ft)	153	79	66	76	44
Queue Length 95th (ft)	#221	101	112	#193	60
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	1060	2225	1045	333	2225
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	0.83	0.39	0.49	0.83	0.25

Intersection Summary

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

Intersection												
Int Delay, s/veh	34.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	11	360	0	0	303	4	314	0	106	2	0	21
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									
Storage Length	-	-	-	-	-	-	0	-	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	12	391	0	0	329	4	341	0	115	2	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	334	0	0	391	0	0	758	749	391	747	747	332
Stage 1	-	-	-	-	-	-	415	415	-	332	332	-
Stage 2	-	-	-	-	-	-	343	334	-	415	415	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1225	-	-	1168	-	-	~ 324	341	658	329	341	710
Stage 1	-	-	-	-	-	-	615	592	-	681	644	-
Stage 2	-	-	-	-	-	-	672	643	-	615	592	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1225	-	-	1168	-	-	~ 310	337	658	269	337	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 310	337	-	269	337	-
Stage 1	-	-	-	-	-	-	607	584	-	672	644	-
Stage 2	-	-	-	-	-	-	650	643	-	501	584	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	91.5	11
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	658	1225	-	-	1168	-	-	621
HCM Lane V/C Ratio	1.101	0.175	0.01	-	-	-	-	-	0.04
HCM Control Delay (s)	118.5	11.6	8	0	-	0	-	-	11
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	13.4	0.6	0	-	-	0	-	-	0.1

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

Queues
27: I-605 NB Off-ramp/Mt. Olive Dr & Huntington Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	49	866	712	285	438	39	237	246	733	85	364
v/c Ratio	0.12	0.50	0.63	1.36	0.25	0.05	0.49	0.49	1.26	0.37	0.80
Control Delay	18.1	22.2	4.1	215.9	18.6	4.2	40.0	39.7	159.0	52.8	62.8
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	18.1	22.2	4.1	215.9	18.6	4.2	40.0	39.7	159.0	52.8	62.8
Queue Length 50th (ft)	20	234	0	~290	102	0	161	167	~609	61	140
Queue Length 95th (ft)	45	292	62	#464	137	16	247	253	#849	112	#203
Internal Link Dist (ft)		1195			1297			721			583
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	412	1720	1135	210	1720	792	479	500	581	237	475
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	0.12	0.50	0.63	1.36	0.25	0.05	0.49	0.49	1.26	0.36	0.77

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.

Future

AM

Intersection												
Int Delay, s/veh	149.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	368	0	0	1415	0	0	0	679	0	0	729
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	400	0	0	1538	0	0	0	738	0	0	792

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1538	0	0	400	0	0	1169	1938	200	1738	1938	769
Stage 1	-	-	-	-	-	-	400	400	-	1538	1538	-
Stage 2	-	-	-	-	-	-	769	1538	-	200	400	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	428	-	-	1155	-	-	148	65	808	56	65	~ 344
Stage 1	-	-	-	-	-	-	597	600	-	121	176	-
Stage 2	-	-	-	-	-	-	360	176	-	783	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	428	-	-	1155	-	-	-	65	808	5	65	~ 344
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	65	-	5	65	-
Stage 1	-	-	-	-	-	-	597	600	-	121	176	-
Stage 2	-	-	-	-	-	-	-	176	-	68	600	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	37	\$ 620
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	808	428	-	-	1155	-	-	344
HCM Lane V/C Ratio	0.913	-	-	-	-	-	-	2.303
HCM Control Delay (s)	37	0	-	-	0	-	-	\$ 620
HCM Lane LOS	E	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	12.8	0	-	-	0	-	-	60.9

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

Queues
9: Arrow Hwy & I-605 SB Off-Ramp



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	836	2102	617	888
v/c Ratio	0.31	1.13	0.95	0.56
Control Delay	10.6	87.3	49.9	1.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.6	87.3	49.9	1.4
Queue Length 50th (ft)	76	~613	270	0
Queue Length 95th (ft)	101	#749	#473	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2668	1857	666	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.31	1.13	0.93	0.56

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
13: Evergreen St & Buena Vista St

Duarte City of Hope
Future No Project AM

	→	↑	↗	↘	↓
Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	998	604	340	318	545
v/c Ratio	0.80	0.33	0.35	0.83	0.30
Control Delay	18.5	7.7	2.0	32.1	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.5	7.7	2.0	32.1	7.5
Queue Length 50th (ft)	113	53	0	77	47
Queue Length 95th (ft)	165	71	21	#187	63
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	1360	2421	1190	512	2421
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	0.25	0.29	0.62	0.23

Intersection Summary

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

Intersection												
Int Delay, s/veh	92.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	389	0	0	555	4	329	0	202	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									
Storage Length	-	-	-	-	-	-	0	-	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	8	423	0	0	603	4	358	0	220	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	608	0	0	423	0	0	1047	1046	423	1043	1043	605
Stage 1	-	-	-	-	-	-	438	438	-	605	605	-
Stage 2	-	-	-	-	-	-	609	608	-	438	438	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	970	-	-	1136	-	-	~ 206	228	631	207	229	498
Stage 1	-	-	-	-	-	-	597	579	-	485	487	-
Stage 2	-	-	-	-	-	-	482	486	-	597	579	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	1136	-	-	~ 201	225	631	134	226	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 201	225	-	134	226	-
Stage 1	-	-	-	-	-	-	590	573	-	480	487	-
Stage 2	-	-	-	-	-	-	475	486	-	385	573	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	259.6	12.3
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	631	970	-	-	1136	-	-	498
HCM Lane V/C Ratio	1.779	0.348	0.008	-	-	-	-	-	0.015
HCM Control Delay (s)	\$ 410.5	13.7	8.7	0	-	0	-	-	12.3
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	25	1.6	0	-	-	0	-	-	0

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

Queues
 27: I-605 NB Off-ramp/Mount Olive Dr & Huntington Dr

Duarte City of Hope
 Future No Project AM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	72	338	388	461	1491	148	665	670	339	65	473
v/c Ratio	1.14	0.70	0.71	0.94	1.11	0.23	1.11	1.10	0.48	0.32	1.15
Control Delay	214.5	67.1	12.9	76.4	102.4	16.3	111.9	108.9	13.8	61.8	144.2
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	214.5	67.1	12.9	76.4	102.4	16.3	111.9	108.9	13.8	61.8	144.2
Queue Length 50th (ft)	~76	160	0	403	~816	46	~725	~726	74	55	~256
Queue Length 95th (ft)	#184	#225	106	#599	#956	98	#977	#978	166	105	#373
Internal Link Dist (ft)		1167			1277			883			1067
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	63	480	550	518	1339	642	600	609	708	202	410
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	1.14	0.70	0.71	0.89	1.11	0.23	1.11	1.10	0.48	0.32	1.15

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.

PM

Intersection													
Int Delay, s/veh	169.6												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1310	0	0	1201	0	0	0	675	0	0	748
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1424	0	0	1305	0	0	0	734	0	0	813

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1305	0	0	1424	0	0	2077	2729	712	2017	2729	653
Stage 1	-	-	-	-	-	-	1424	1424	-	1305	1305	-
Stage 2	-	-	-	-	-	-	653	1305	-	712	1424	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	526	-	-	474	-	-	31	20	~ 375	34	20	~ 410
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	423	228	-	389	200	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	526	-	-	474	-	-	-	20	~ 375	-	20	~ 410
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	20	-	-	20	-
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	-	228	-	-	200	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	\$ 463.8	\$ 473.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	526	-	-	474	-	-	410
HCM Lane V/C Ratio	1.957	-	-	-	-	-	-	1.983
HCM Control Delay (s)	\$ 463.8	0	-	-	0	-	-	\$ 473.2
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	50.3	0	-	-	0	-	-	55.8

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

Queues
 9: Arrow Hwy & I-605 SB Off-Ramp



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1827	622	465	502
v/c Ratio	0.84	0.41	0.73	0.32
Control Delay	16.0	9.1	18.4	0.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.0	9.1	18.4	0.5
Queue Length 50th (ft)	123	46	79	0
Queue Length 95th (ft)	#225	81	#158	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2172	1511	756	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.84	0.41	0.62	0.32

Intersection Summary

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

Queues
13: Evergreen St & Buena Vista St



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1199	994	605	357	630
v/c Ratio	1.21	0.48	0.62	1.39	0.31
Control Delay	129.3	8.2	10.1	217.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	129.3	8.2	10.1	217.3	6.8
Queue Length 50th (ft)	~285	96	99	~178	53
Queue Length 95th (ft)	#353	119	158	#198	70
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	987	2064	968	257	2064
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	1.21	0.48	0.63	1.39	0.31

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	104.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	429	0	0	347	4	396	0	203	2	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									
Storage Length	-	-	-	-	-	-	0	-	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	13	466	0	0	377	4	430	0	221	2	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	382	0	0	466	0	0	884	874	466	871	871	379
Stage 1	-	-	-	-	-	-	492	492	-	379	379	-
Stage 2	-	-	-	-	-	-	392	382	-	492	492	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1176	-	-	1095	-	-	~ 266	288	597	271	289	668
Stage 1	-	-	-	-	-	-	558	548	-	643	615	-
Stage 2	-	-	-	-	-	-	633	613	-	558	548	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1176	-	-	1095	-	-	~ 253	284	597	169	285	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 253	284	-	169	285	-
Stage 1	-	-	-	-	-	-	550	540	-	633	615	-
Stage 2	-	-	-	-	-	-	609	613	-	346	540	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	247	12
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	597	1176	-	-	1095	-	-	540
HCM Lane V/C Ratio	1.701	0.37	0.011	-	-	-	-	-	0.05
HCM Control Delay (s)	\$ 366.2	14.5	8.1	0	-	0	-	-	12
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	28	1.7	0	-	-	0	-	-	0.2

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

Queues
27: I-605 NB Off-ramp/Mount Olive Dr & Huntington Dr

Duarte City of Hope
Future No Project PM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	58	1059	927	314	663	43	376	389	810	93	416
v/c Ratio	0.18	0.57	0.77	1.80	0.35	0.05	0.82	0.83	1.55	0.46	1.03
Control Delay	19.0	23.7	8.9	408.9	19.8	5.5	64.0	63.7	284.7	66.0	109.8
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	19.0	23.7	8.9	408.9	19.8	5.5	64.0	63.7	284.7	66.0	109.8
Queue Length 50th (ft)	27	331	78	~429	178	2	340	351	~951	80	~206
Queue Length 95th (ft)	56	396	271	#467	223	21	#508	#523	#1204	140	#318
Internal Link Dist (ft)		1195			1297			721			583
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	330	1870	1201	174	1870	855	456	471	524	202	405
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	0.18	0.57	0.77	1.80	0.35	0.05	0.82	0.83	1.55	0.46	1.03

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.

Future Plus Project

AM

Intersection													
Int Delay, s/veh	202.9												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	368	0	0	1500	0	0	0	775	0	0	803
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	400	0	0	1630	0	0	0	842	0	0	873

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1630	0	0	400	0	0	1215	2030	200	1830	2030	815
Stage 1	-	-	-	-	-	-	400	400	-	1630	1630	-
Stage 2	-	-	-	-	-	-	815	1630	-	200	400	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
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	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	394	-	-	1155	-	-	137	57 ~ 808	-	48	57 ~ 321	-
Stage 1	-	-	-	-	-	-	597	600	-	106	158	-
Stage 2	-	-	-	-	-	-	338	158	-	783	600	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	394	-	-	1155	-	-	-	57 ~ 808	-	-	57 ~ 321	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	57	-	-	57	-
Stage 1	-	-	-	-	-	-	597	600	-	106	158	-
Stage 2	-	-	-	-	-	-	-	158	-	-	600	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	65.7	\$ 807.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	808	394	-	-	1155	-	-	321
HCM Lane V/C Ratio	1.043	-	-	-	-	-	-	2.719
HCM Control Delay (s)	65.7	0	-	-	0	-	-	\$ 807.2
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	20.1	0	-	-	0	-	-	73.4

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

Queues
9: Arrow Hwy & I-605 SB Off-Ramp



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	842	2134	617	888
v/c Ratio	0.32	1.15	0.95	0.56
Control Delay	10.6	94.5	49.9	1.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.6	94.5	49.9	1.4
Queue Length 50th (ft)	76	-630	270	0
Queue Length 95th (ft)	101	#765	#473	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2668	1857	666	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.32	1.15	0.93	0.56

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
 13: Evergreen St & Buena Vista St



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1133	631	358	318	683
v/c Ratio	0.99dr	0.35	0.36	0.87	0.38
Control Delay	32.9	8.0	2.0	37.6	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.9	8.0	2.0	37.6	8.2
Queue Length 50th (ft)	~188	56	0	80	62
Queue Length 95th (ft)	#272	74	21	#195	81
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	1212	2249	1136	453	2249
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	0.93	0.28	0.32	0.70	0.30

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.
- dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Intersection												
Int Delay, s/veh	150.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	7	389	0	0	555	4	403	0	218	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									
Storage Length	-	-	-	-	-	-	0	-	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	8	423	0	0	603	4	438	0	237	0	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	608	0	0	423	0	0	1047	1046	423	1043	1043	605
Stage 1	-	-	-	-	-	-	438	438	-	605	605	-
Stage 2	-	-	-	-	-	-	609	608	-	438	438	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	970	-	-	1136	-	-	~ 206	228	631	207	229	498
Stage 1	-	-	-	-	-	-	597	579	-	485	487	-
Stage 2	-	-	-	-	-	-	482	486	-	597	579	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	970	-	-	1136	-	-	~ 201	225	631	128	226	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 201	225	-	128	226	-
Stage 1	-	-	-	-	-	-	590	573	-	480	487	-
Stage 2	-	-	-	-	-	-	475	486	-	369	573	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	\$ 384.5	12.3
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	201	631	970	-	-	1136	-	-	498
HCM Lane V/C Ratio	2.179	0.376	0.008	-	-	-	-	-	0.015
HCM Control Delay (s)	\$ 584.9	14.1	8.7	0	-	0	-	-	12.3
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	34.4	1.7	0	-	-	0	-	-	0

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

Queues
27: I-605 NB Off-ramp/Mount Olive Dr & Huntington Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	72	341	393	461	1511	148	689	688	339	65	473
v/c Ratio	1.44	0.71	0.71	0.99	1.15	0.23	1.10	1.09	0.47	0.32	1.15
Control Delay	326.0	66.9	12.8	89.5	116.7	16.7	109.0	103.2	13.2	61.8	144.2
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	326.0	66.9	12.8	89.5	116.7	16.7	109.0	103.2	13.2	61.8	144.2
Queue Length 50th (ft)	~88	158	0	420	-848	47	~749	~737	73	55	~256
Queue Length 95th (ft)	#196	214	104	#646	#989	99	#1004	#992	163	105	#373
Internal Link Dist (ft)		1167			1277			883			1067
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	50	480	554	467	1314	631	624	633	727	202	410
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	1.44	0.71	0.71	0.99	1.15	0.23	1.10	1.09	0.47	0.32	1.15

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.

PM

Intersection													
Int Delay, s/veh	173.2												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	1310	0	0	1201	0	0	0	675	0	0	760
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									
Storage Length	-	-	-	-	-	-	-	-	0	-	-	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	0	1424	0	0	1305	0	0	0	734	0	0	826

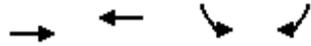
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1305	0	0	1424	0	0	2077	2729	712	2017	2729	653
Stage 1	-	-	-	-	-	-	1424	1424	-	1305	1305	-
Stage 2	-	-	-	-	-	-	653	1305	-	712	1424	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	526	-	-	474	-	-	31	20	~ 375	34	20	~ 410
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	423	228	-	389	200	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	526	-	-	474	-	-	-	20	~ 375	-	20	~ 410
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	20	-	-	20	-
Stage 1	-	-	-	-	-	-	143	200	-	169	228	-
Stage 2	-	-	-	-	-	-	-	228	-	-	200	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	\$ 463.8	\$ 487.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	526	-	-	474	-	-	410
HCM Lane V/C Ratio	1.957	-	-	-	-	-	-	2.015
HCM Control Delay (s)	\$ 463.8	0	-	-	0	-	-	\$ 487.3
HCM Lane LOS	F	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	50.3	0	-	-	0	-	-	57.4

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

Queues
 9: Arrow Hwy & I-605 SB Off-Ramp



Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1856	627	465	502
v/c Ratio	0.85	0.41	0.73	0.32
Control Delay	16.8	9.1	18.4	0.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.8	9.1	18.4	0.5
Queue Length 50th (ft)	126	47	79	0
Queue Length 95th (ft)	#230	81	#158	0
Internal Link Dist (ft)	548	1350	559	
Turn Bay Length (ft)				
Base Capacity (vph)	2172	1511	756	1583
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.85	0.41	0.62	0.32

Intersection Summary

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

Queues
13: Evergreen St & Buena Vista St



Lane Group	EBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	1222	1151	708	357	653
v/c Ratio	1.23	0.56	0.73	1.78	0.32
Control Delay	137.4	9.0	13.2	387.7	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	137.4	9.0	13.2	387.7	6.9
Queue Length 50th (ft)	~293	118	135	~130	55
Queue Length 95th (ft)	#362	145	213	#242	73
Internal Link Dist (ft)	572	366			278
Turn Bay Length (ft)					
Base Capacity (vph)	990	2064	968	201	2064
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	1.23	0.56	0.73	1.78	0.32

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 113.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	12	429	0	0	347	4	408	0	206	2	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									
Storage Length	-	-	-	-	-	-	0	-	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	13	466	0	0	377	4	443	0	224	2	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	382	0	0	466	0	0	884	874	466	871	871	379
Stage 1	-	-	-	-	-	-	492	492	-	379	379	-
Stage 2	-	-	-	-	-	-	392	382	-	492	492	-
Critical Hdwy	4.12	-	-	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	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1176	-	-	1095	-	-	~ 266	288	597	271	289	668
Stage 1	-	-	-	-	-	-	558	548	-	643	615	-
Stage 2	-	-	-	-	-	-	633	613	-	558	548	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1176	-	-	1095	-	-	~ 253	284	597	167	285	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 253	284	-	167	285	-
Stage 1	-	-	-	-	-	-	550	540	-	633	615	-
Stage 2	-	-	-	-	-	-	609	613	-	343	540	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	263	12
HCM LOS			F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	597	1176	-	-	1095	-	-	539
HCM Lane V/C Ratio	1.753	0.375	0.011	-	-	-	-	-	0.05
HCM Control Delay (s)	\$ 388.4	14.6	8.1	0	-	0	-	-	12
HCM Lane LOS	F	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	29.5	1.7	0	-	-	0	-	-	0.2

Notes

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

Queues
 27: I-605 NB Off-ramp/Mount Olive Dr & Huntington Dr



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	58	1076	958	314	666	43	380	391	810	93	416
v/c Ratio	0.17	0.57	0.80	1.82	0.35	0.05	0.86	0.85	1.58	0.46	1.03
Control Delay	18.4	23.2	10.3	413.3	19.2	5.3	68.1	67.4	299.2	66.0	109.8
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	18.4	23.2	10.3	413.3	19.2	5.3	68.1	67.4	299.2	66.0	109.8
Queue Length 50th (ft)	26	333	118	~429	176	2	348	357	~962	80	~206
Queue Length 95th (ft)	55	398	331	#469	220	21	#530	#537	#1215	140	#318
Internal Link Dist (ft)		1195			1297			721			583
Turn Bay Length (ft)			300	175		100	480			75	
Base Capacity (vph)	335	1895	1204	173	1895	866	444	458	513	202	405
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	0.17	0.57	0.80	1.82	0.35	0.05	0.86	0.85	1.58	0.46	1.03

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.

Existing Plus Project Plus Mitigation

AM

Queues

17: I-210 WB Off-ramp/Car Dealership Driveway & Central Ave



Lane Group	EBT	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	431	607	438	237	8
v/c Ratio	0.53	0.73	0.70	0.26	0.03
Control Delay	16.3	21.9	25.7	0.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	21.9	25.7	0.7	0.1
Queue Length 50th (ft)	104	166	130	0	0
Queue Length 95th (ft)	247	#405	#329	0	0
Internal Link Dist (ft)	743	501			689
Turn Bay Length (ft)					
Base Capacity (vph)	1054	1064	797	998	544
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	0.41	0.57	0.55	0.24	0.01

Intersection Summary

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

PM

Queues
 17: I-210 WB Off-ramp/Car Dealership Driveway & Central Ave



Lane Group	EBT	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	479	381	443	224	27
v/c Ratio	0.70	0.55	0.71	0.25	0.10
Control Delay	19.9	16.0	28.0	0.7	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	16.0	28.0	0.7	0.7
Queue Length 50th (ft)	95	70	85	0	0
Queue Length 95th (ft)	228	171	#370	0	0
Internal Link Dist (ft)	743	501			689
Turn Bay Length (ft)					
Base Capacity (vph)	1226	1243	628	896	607
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	0.39	0.31	0.71	0.25	0.04

Intersection Summary

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

APPENDIX G: FREEWAY MAINLINE LOS ANALYSIS



Existing

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	6332	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1684	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	1726	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	1726	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.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	6766	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1799	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	1844	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1844	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	4	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: NB south of I-210
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	4465	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1188	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	1217	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	1217	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	18.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	4574	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1216	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	1247	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1247	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	4	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	5625	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1496	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	1533	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1533	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	68.7	mi/h
Number of lanes, N	4	
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.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	5504	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1464	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	1500	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	1500	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB west of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	5869	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1561	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	1600	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	1600	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	4	
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.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	4839	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1287	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	1319	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1319	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 9/27/2016
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB east of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	5500	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1463	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	1499	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	1499	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Existing Plus Project

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	6444	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1714	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	1757	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	1757	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	63.2	mi/h
Number of lanes, N	4	
Density, D	27.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	6777	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1802	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	1847	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1847	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	65.1	mi/h
Number of lanes, N	4	
Density, D	28.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: NB south of I-210
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	4600	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1223	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	1254	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	1254	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	19.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	4694	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1248	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	1280	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1280	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	69.9	mi/h
Number of lanes, N	4	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	5646	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1502	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	4	
Free-flow speed:	Measured	
FFS or BFFS	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1539	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	68.7	mi/h
Number of lanes, N	4	
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.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	5572	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1482	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	1519	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	1519	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	64.8	mi/h
Number of lanes, N	4	
Density, D	23.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB west of I-605
 Jurisdiction:
 Analysis Year: 2015
 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	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	1616	pc/h/ln
Free-flow speed, FFS	64.0	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.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	4884	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1299	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	1331	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1331	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	69.8	mi/h
Number of lanes, N	4	
Density, D	19.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB east of I-605
 Jurisdiction:
 Analysis Year: 2015
 Description:

Flow Inputs and Adjustments

Volume, V	5540	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1473	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	1510	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	1510	pc/h/ln
Free-flow speed, FFS	67.0	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.

Future

Phone: Fax:
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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	7562	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2011	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	2061	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	2061	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	58.8	mi/h
Number of lanes, N	4	
Density, D	35.0+	pc/mi/ln
Level of service, LOS	E	

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: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	7836	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2084	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	2136	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	2136	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	59.8	mi/h
Number of lanes, N	4	
Density, D	35.7	pc/mi/ln
Level of service, LOS	E	

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: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: NB south of I-210
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	5294	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1408	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	1443	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	1443	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.

Phone: Fax:
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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	5549	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1476	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	1513	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1513	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	68.9	mi/h
Number of lanes, N	4	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6456	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1717	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	1760	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1760	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	66.4	mi/h
Number of lanes, N	4	
Density, D	26.5	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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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6262	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1665	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	1707	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	1707	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	4	
Density, D	26.8	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: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB west of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6732	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1790	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	1835	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	1835	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	4	
Density, D	29.4	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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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	5466	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1454	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	1490	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1490	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	69.0	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: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB east of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6241	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1660	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	1701	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	1701	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	63.7	mi/h
Number of lanes, N	4	
Density, D	26.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Future Plus Project

Phone: Fax:
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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	7674	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2041	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	2092	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	2092	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	58.2	mi/h
Number of lanes, N	4	
Density, D	35.9	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
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Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-210
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	7847	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	2087	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	2139	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	2139	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	59.8	mi/h
Number of lanes, N	4	
Density, D	35.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: NB south of I-210
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	5429	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1444	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	1480	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	1480	pc/h/ln
Free-flow speed, FFS	66.0	mi/h
Average passenger-car speed, S	64.9	mi/h
Number of lanes, N	4	
Density, D	22.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	5669	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1508	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	1545	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1545	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	68.6	mi/h
Number of lanes, N	4	
Density, D	22.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-605
 From/To: SB south of I-210
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6477	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1723	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	1766	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1766	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	66.3	mi/h
Number of lanes, N	4	
Density, D	26.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB west of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6330	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1684	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	1726	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	1726	pc/h/ln
Free-flow speed, FFS	64.0	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.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB west of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6792	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1806	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	1852	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	1852	pc/h/ln
Free-flow speed, FFS	64.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	4	
Density, D	29.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 7-8 AM
 Freeway/Direction: I-10
 From/To: EB east of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	5511	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1466	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	1502	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	68.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	68.0	mi/h

LOS and Performance Measures

Flow rate, vp	1502	pc/h/ln
Free-flow speed, FFS	68.0	mi/h
Average passenger-car speed, S	68.9	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.

Phone: Fax:
E-mail:

Operational Analysis

Analyst: Michael Kao
 Agency or Company: Fehr & Peers
 Date Performed: 3/27/2017
 Analysis Time Period: 5-6 PM
 Freeway/Direction: I-10
 From/To: WB east of I-605
 Jurisdiction:
 Analysis Year: 2035
 Description:

Flow Inputs and Adjustments

Volume, V	6281	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	1670	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	1712	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	1712	pc/h/ln
Free-flow speed, FFS	67.0	mi/h
Average passenger-car speed, S	63.6	mi/h
Number of lanes, N	4	
Density, D	26.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.