

Appendix D

Transportation Impact Analysis



**THE DISTRICT AT SOUTH BAY
DRAFT TRANSPORTATION IMPACT ANALYSIS**

CITY OF CARSON, CALIFORNIA

SEPTEMBER 2017

PREPARED BY
FEHR & PEERS

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1. INTRODUCTION

This report documents the assumptions, methodologies, and findings of a transportation impact study conducted by Fehr & Peers to evaluate the potential traffic impacts of The District at South Bay Project (the modified Project or proposed modified Project) in the City of Carson, California, on a 157-acre site located southwest of the I-405 Freeway, northwest of the Avalon Boulevard interchange, and south of Del Amo Boulevard.¹ This study was conducted as part of a subsequent environmental impact report (SEIR) being prepared for the proposed modified Project and compares the transportation impacts of the previously approved project to the impacts of the proposed modified Project. The approved FEIR was finalized and approved for the Project under the previous name of Carson Marketplace and included an additional 11 acres north of Del Amo Boulevard.

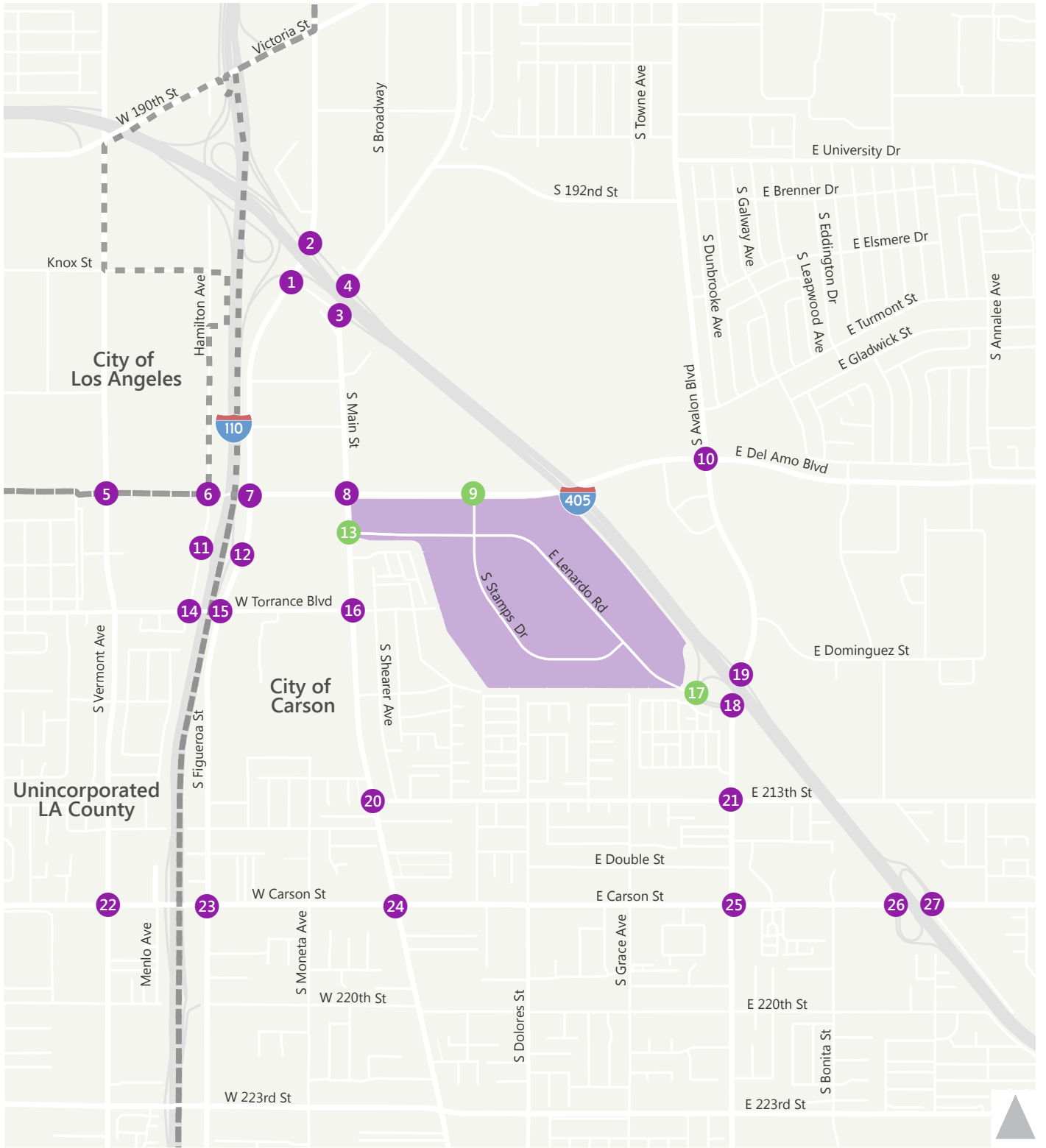
MODIFIED PROJECT DESCRIPTION

The modified Project is proposed to be developed in the City of Carson in the South Bay area of Los Angeles County on a currently undeveloped site. It is located approximately 17 miles south of downtown Los Angeles and approximately 6.5 miles east of the Pacific Ocean. The Project site is comprised of approximately 157 acres located southwest of the San Diego Freeway (I-405), northwest of the Avalon Boulevard interchange, and south of Del Amo Boulevard. The Project site is bounded by the 11-acre parcel described above (and to the north of that parcel, by the Porsche Experience Center), the Torrance Lateral Flood Control Channel and residential uses to the south and west, and the I-405 Freeway to the east. Figure 1 illustrates the Project site and study area. Figure 2 includes the site plan.

The modified Project is a modified version of a previously analyzed and approved project, Carson Marketplace (Year 2006). Since that approval, the project description has been modified. The previously analyzed and approved project, Carson Marketplace, included an additional 11-acre parcel north of Del Amo Boulevard (DD3). This 11-acre parcel has been sold to a private developer and has been assumed in this analysis to be open and operating under the future (2023) year analysis conditions as a related project. Chapter 9 Summary and Conclusions includes a comparison of the results from the previous approved project and this analysis for the modified Project.

¹ The District at South Bay Specific Plan regulates a 168-acre site, including the subject 157-acre former landfill site and 11 additional acres upon which a residential housing project is under development. The modified Project treats the 11-acre site (referred to as DD3) as a related project for purposes of CEQA.





- Project Site
- City Boundaries
- Study Intersection**
- Existing Intersection
- Future Project Intersection



Figure 1
Proposed Modified Project and Study Intersections

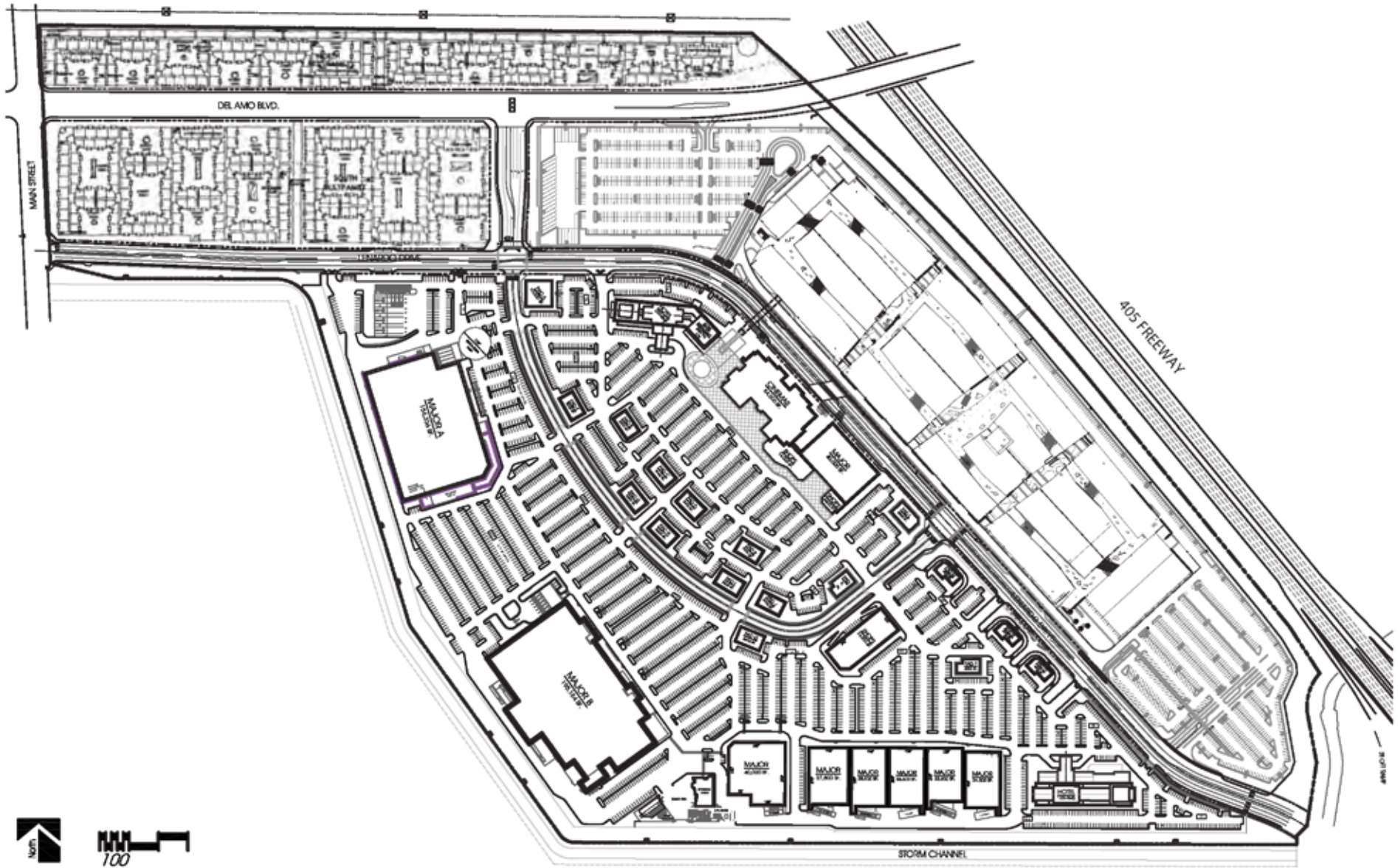


Image Source: Nadel Retail Architects, LLP

Figure 2
Site Plan

The modified Project² as analyzed in this study involves the construction of:

- 1,250 residential units
- 1,216,020 gross leasable square feet of commercial retail space including:
 - 581,020 gross leasable square feet of luxury outlet shops
 - 575,000 gross leasable square feet of regional retail
 - 60,000 gross leasable square feet of neighborhood retail
- 130,000 gross leasable square feet of commercial recreation/entertainment space
- 140,000 gross leasable square feet of restaurant space
- 350 hotel rooms

The modified Project, as illustrated in the site plan in Figure 2, would have signalized access and egress at three primary locations. Street "B" at Del Amo Boulevard would provide access from Del Amo Boulevard to the Project site. This intersection would be re-constructed and reconfigured as part of the modified Project. A second major access location would be via the recently reconfigured Avalon Boulevard and I-405 Freeway where Street "A" extends to Avalon Boulevard. The I-405 southbound off-ramps would be restriped to allow right-turn movements onto Street "A". Avalon Boulevard would be re-signed to allow northbound left-turn movements onto Street "A". A third signalized access location is proposed at Street "A" & Main Street. One additional stop-controlled right-turn in/right-turn out driveway will be constructed along eastbound Del Amo Boulevard to provide a minor access to residential uses proposed along Del Amo Boulevard, west of Street "B". Chapter 7. Site Access contains a detailed discussion of site access locations.

STUDY SCOPE

The scope of work for this study was determined in conjunction with the City of Carson's Transportation staff. The base assumptions and technical methodologies were discussed with the City of Carson as part of the study approach and agreed to in the Methodology and Assumptions Memorandum dated July 2017. The memo is included in Appendix A1 to this document.

² ITE recommended trip generation rates for commercial retail are based on gross leasable area.



TRAFFIC SCENARIOS

The study assumes that the modified Project would be completed by year 2023 and is directed at analyzing the potential project-generated traffic impacts on local street system under both existing and future year traffic conditions. The following traffic scenarios have been developed and analyzed as part of this study:

- 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. This scenario is described in detail in Chapter 2.
- 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 modified Project on existing traffic operating conditions were then identified. This scenario is described in detail in Chapter 4.
- Future Base (Year 2023) Conditions – Future traffic projections without the proposed modified Project were developed for the year 2023. The objective of this analysis was to project future traffic growth and operating conditions that could be expected to result from regional growth, cumulative projects, and transportation network changes in the vicinity of the Project site by the year 2023. This scenario is described in detail in Chapter 3.
- Future (Year 2023) 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 modified Project on future traffic operating conditions were then identified. This scenario is described in detail in Chapter 4.

STUDY INTERSECTIONS

A total of 27 intersections were selected for the analysis of the modified Project in consultation with the City of Carson. Of the 27 intersections, 23 are signalized intersections and four are unsignalized intersections (Figure 1).

The analysis for the approved Project included the same 27 study intersections.



Signalized Intersections

The following signalized intersections, illustrated in Figure 1, were identified in conjunction with the City of Carson to be analyzed as part of the scope of work for this modified Project:

3. Main Street & I-405 southbound on-ramp
4. Main Street & I-405 northbound off-ramp
5. Vermont Avenue & Del Amo Boulevard
7. Figueroa Street & Del Amo Boulevard
8. Main Street & Del Amo Boulevard
9. Street "B" (also referred to as Stamps Drive) & Del Amo Boulevard (*future project intersection*)
10. Avalon Boulevard & Del Amo Boulevard
12. Figueroa Street & I-110 northbound ramps
13. Main Street & Street "A" (also referred to as Lenardo Road) (*future project intersection*)
14. Hamilton Avenue & Torrance Boulevard
15. Figueroa Street & Torrance Boulevard
16. Main Street & Torrance Boulevard
17. Street "A" (also referred to as Lenardo Road) & I-405 southbound ramps (*future project intersection*)
18. Avalon Boulevard & I-405 southbound ramps
19. Avalon Boulevard & I-405 northbound ramps
20. Main Street & 213th Street
21. Avalon Boulevard & 213th Street
22. Vermont Avenue & Carson Street
23. Figueroa Street & Carson Street
24. Main Street & Carson Street
25. Avalon Boulevard & Carson Street
26. I-405 southbound ramps & Carson Street
27. I-405 northbound ramps & Carson Street

The three intersections indicated as *future project intersection* were new project intersections and only analyzed under the with-project scenarios. This is consistent with the analysis for the approved Project.

Unsignalized Analysis

The following four unsignalized intersections, illustrated in Figure 1, were identified in conjunction with the City of Carson to be considered for signal warrant analyses:

1. Figueroa Street & I-405 southbound on-ramp
2. Figueroa Street & I-405 northbound off-ramp
6. Hamilton Avenue & Del Amo Boulevard
11. Hamilton Avenue & I-110 southbound ramps

This is consistent with the analysis for the approved Project.



Freeway Analysis

The *Congestion Management Program for Los Angeles County* (CMP) (Metro, 2010) requires that all CMP mainline freeway monitoring locations where a proposed modified Project will add 150 or more trips, in either direction, during either the AM or PM peak hours be analyzed. The proposed modified Project is expected to add over 150 vehicle trips to the CMP mainline freeway monitoring station south of I-110 at Carson Scales (Station 1067) during both the AM and PM peak periods. Due to the regional setting of the Project site within the freeway network and the regional nature of certain of the modified Project land uses, a total of 23 freeway segments were included in the freeway impact analysis:

State Route 91

- Between I-110 Interchange and Avalon Boulevard
- Between Avalon Boulevard and Central Avenue
- Between Central Avenue and Wilmington Avenue

Interstate Route 110

- Between SR-1 and Sepulveda Boulevard
- Between Sepulveda Boulevard and Carson Street
- Between Carson Street and Torrance Boulevard
- Between Torrance Boulevard and I-405 Interchange
- Between I-405 Interchange and SR-91 Interchange
- Between SR-91 Interchange and Redondo Beach Boulevard
- Between Redondo Beach Boulevard and Rosecrans Avenue

Interstate Route 405

- Between I-710 Interchange and Alameda Street
- Between Alameda Street and Wilmington Avenue
- Between Wilmington Avenue and Carson Street
- Between Carson Street and Avalon Boulevard
- Between Avalon Boulevard and I-110 Interchange
- Between I-110 Interchange and Vermont Avenue
- Between Vermont Avenue and Normandie Avenue
- Between Normandie Avenue and Western Avenue
- Between Western Avenue and Crenshaw Boulevard
- Between Crenshaw Boulevard and Redondo Beach Boulevard

Interstate Route 710

- Between Willow Street and I-405 Interchange
- Between I-405 Interchange and Del Amo Boulevard
- Between Del Amo Boulevard and Long Beach Boulevard



These freeway segments represent a subset of the segments analyzed for the approved Project and include all the locations that had significant impacts as part of the approved Project transportation impact study.³

The City of Carson and Caltrans determined that the modified Project would meet the criteria requiring a freeway ramp impact analysis. In consultation with Caltrans, it was determined that a freeway ramp intersection queuing analysis would be conducted for the following off-ramp intersections:

2. Figueroa Street & I-405 northbound off-ramp
4. Main Street & I-405 northbound off-ramp
11. Hamilton Avenue & I-110 southbound ramps
12. Figueroa Street & I-110 northbound ramps
18. Avalon Boulevard & I-405 southbound ramps
19. Avalon Boulevard & I-405 northbound ramps
26. I-405 southbound ramps & Carson Street
27. I-405 northbound ramps & Carson Street

A freeway ramp queuing analysis was not conducted as part of the approved Project transportation impact study.

Chapter 6 discusses the regional transportation impact analysis including a discussion of CMP arterial monitoring stations, freeway impact analysis, freeway ramp queuing analysis, and regional transit impact analysis.

ORGANIZATION OF REPORT

This report is divided into 10 chapters, including this introduction. Chapter 2 describes the existing conditions including an inventory of the streets, highways, and transit service in the study area, a summary of existing traffic volumes, and an assessment of existing operating conditions. The methodologies used to develop traffic forecasts for the Existing, Existing plus Project, Future Base, 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 modified Project under both existing and future conditions. Mitigation measures are provided in Chapter 5. Chapter 6 provides a regional transportation impact analysis. Chapter 7 provides an assessment of the proposed modified Project's access scheme. Chapter 8 summarizes the construction impact analysis. Chapter 9 presents an alternatives analysis and Chapter 10 provides the summary and conclusions.

³ Fehr & Peers conducted a sensitivity analysis to determine the scope of the freeway segment analysis. As a result of the sensitivity analysis, 23 segments were identified for study.



As discussed in the introduction, this transportation impact report not only draws comparisons with the approved Project with respect to significant traffic impacts on roadways, intersections freeways and transit, it also provides a detailed comparison of changes in the study area environmental setting between 2005 and 2017 including:

- Intersection traffic volumes and capacities
- Approach and methodology used to analyze intersections for significant impacts
- Trip generation rates
- Method to estimate trip credits attributable to internal trip capture, transit and pass-by)
- Application of estimating project trip generation, number and type of related projects
- Application and feasibility of mitigations involving both transportation demand management measures and physical improvements



2. EXISTING CONDITIONS

A comprehensive data collection effort was undertaken to develop a detailed description of existing 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 Carson. The study area selected for analysis extends to include Avalon Boulevard to the east, Vermont Avenue to the west, the I-405 Freeway to the north, and Carson Street to the south. The streets in the study area are under the jurisdiction of the City of Carson, City of Los Angeles, and Los Angeles County.

EXISTING STREET SYSTEM

As illustrated in Figure 1, the Project site is located south of Del Amo Boulevard and north of the Avalon Boulevard interchange. I-405 and the Harbor Freeway (I-110) provide the primary regional access to the Project site.

Major arterials serving the study area include Del Amo Boulevard, Torrance Boulevard, and Carson Street in the east/west direction and Vermont Avenue, Figueroa Street, Main Street, and Avalon Boulevard in the north/south direction.

The characteristics of the freeways and major roadways serving the study area are described below.

FREEWAYS

- **Interstate 405** runs in a northwest/southeast direction, extending from the I-5 in Irvine, and runs northwest into the San Fernando Valley. In the vicinity of the study area, the freeway provides four lanes and one carpool lane in each direction plus auxiliary lanes. Ramps are provided at Carson Street, Avalon Boulevard, and Main Street.
- **Interstate 110** runs in the north/south direction, extending from San Pedro to downtown Los Angeles. In the vicinity of the study area, the Harbor Freeway provides four lanes in each direction plus auxiliary lanes. Ramps are provided off of Figueroa Street and Hamilton Avenue.

EAST/WEST STREETS

- **Del Amo Boulevard** is classified as a Major Highway in the City of Carson's General Plan, Transportation and Infrastructure Element and runs in the east/west direction north of the Project site with two to three travel lanes in each direction within the Project study area. Parking is permitted along portions of the roadway on both sides of the street between Vermont Avenue and



Hamilton Avenue. Left-turn pockets are present at major intersections. Del Amo Boulevard west of the I-110 is under the jurisdiction of Los Angeles County.

- **Torrance Boulevard** is classified as a Secondary Highway and runs in the east/west direction west of the Project site with one to two travel lanes in each direction and a center turn lane. Parking is permitted on the westbound side of the street, from Main Street to Figueroa Street and permitted on both sides of the street east of Main Street. Left-turn pockets are present at major intersections. Torrance Boulevard west of the I-110 is under the jurisdiction of Los Angeles County.
- **213th Street** is designated as a Collector and runs in the east/west direction south of the Project site with one travel lane in each direction. Parking is permitted on both sides of the street.
- **Carson Street** is classified as a Major Highway and runs in the east/west direction south of the Project site with two travel lanes in each direction through the majority of the study area. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections. Carson Street from Figueroa Street to I-405 ramps is currently under construction as part of the Carson Street Mixed-Use District Master Plan. Carson Street west of the I-110 is under the jurisdiction of Los Angeles County.

NORTH/SOUTH STREETS

- **Vermont Avenue** runs in the north/south direction west of the Project site in unincorporated Los Angeles County south of Del Amo Boulevard and in the City of Los Angeles north of Del Amo Boulevard. Vermont Avenue has two travel lanes in each direction with a center turn lane. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.
- **Hamilton Avenue** runs in the north/south direction west of the Project site in unincorporated Los Angeles County south of Del Amo Boulevard and in the City of Los Angeles north of Del Amo Boulevard. Hamilton Avenue has two travel lanes in each direction and left-turn pockets are present at major intersections.
- **Figueroa Street** is classified as a Major Highway and runs west of the Project site with two travel lanes in each direction with a center turn lane present in some parts of the street. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.
- **Main Street** is classified as a Major Highway and runs in the north/south direction west of the Project site with two travel lanes in each direction with a center turn lane present in some parts of the street. Parking is generally permitted on both sides of the street and left-turn pockets are present at major intersections.
- **Avalon Boulevard** is classified as a Major Highway and runs in the north/south direction east of the Project site with three travel lanes in each direction. Parking is not permitted within the study area. Left-turn pockets are present at major intersections.

Lane configurations of the study intersections are provided in Appendix B.



EXISTING PUBLIC TRANSIT SERVICE

The Project site is served by a moderate level of public transit. Figure 3 shows the various municipal bus routes, rapid bus routes, and circulators providing service in the study area. The modified Project is directly adjacent to the Carson Circuit North South Shuttle Line on Main Street. Three local Metro (Routes 205, 246/45, 550), the Metro Silver Line, four Torrance Transit (1, 3, R3, 4), eight Carson Circuit (A, B, C, D, E, G, S), and one Commuter Express (Route 448) bus routes provide service within the study area. Table 1 details the transit service near the Project site.

EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Figure 4 shows existing bicycle facilities in the study area. As shown in the figure, the study area has a limited existing bikeway network which includes a Class II bike lane in each direction on Vermont Avenue, on Del Amo Boulevard east of Avalon Boulevard, and on Avalon Boulevard north of Del Amo Boulevard. There is also a Class III bike route on Dolores Street south of 213th Street and on Turmont Street. The study area generally has a mature network of 8-foot sidewalks throughout but lacks in other pedestrian facilities such as 4-way crosswalks, countdown signals, and other safety features.

There are a number of bike lanes and bike routes planned throughout the study area with an extension of the bike path along the Dominguez Channel, east of the I-405. There are also two planned bicycle facilities included as part of the modified Project: a Class II bike lane on Street "B" and a Class I bike path on Street "A". Proposed bicycle facilities are also shown in Figure 4. The proposed facilities come from three sources including the City of Los Angeles *Mobility Plan 2035*, which identifies corridors proposed to receive improved bicycle, pedestrian and vehicle infrastructure improvements, the City of Carson Master Plan of Bikeways, and Metro's Active Transportation Strategic Plan.

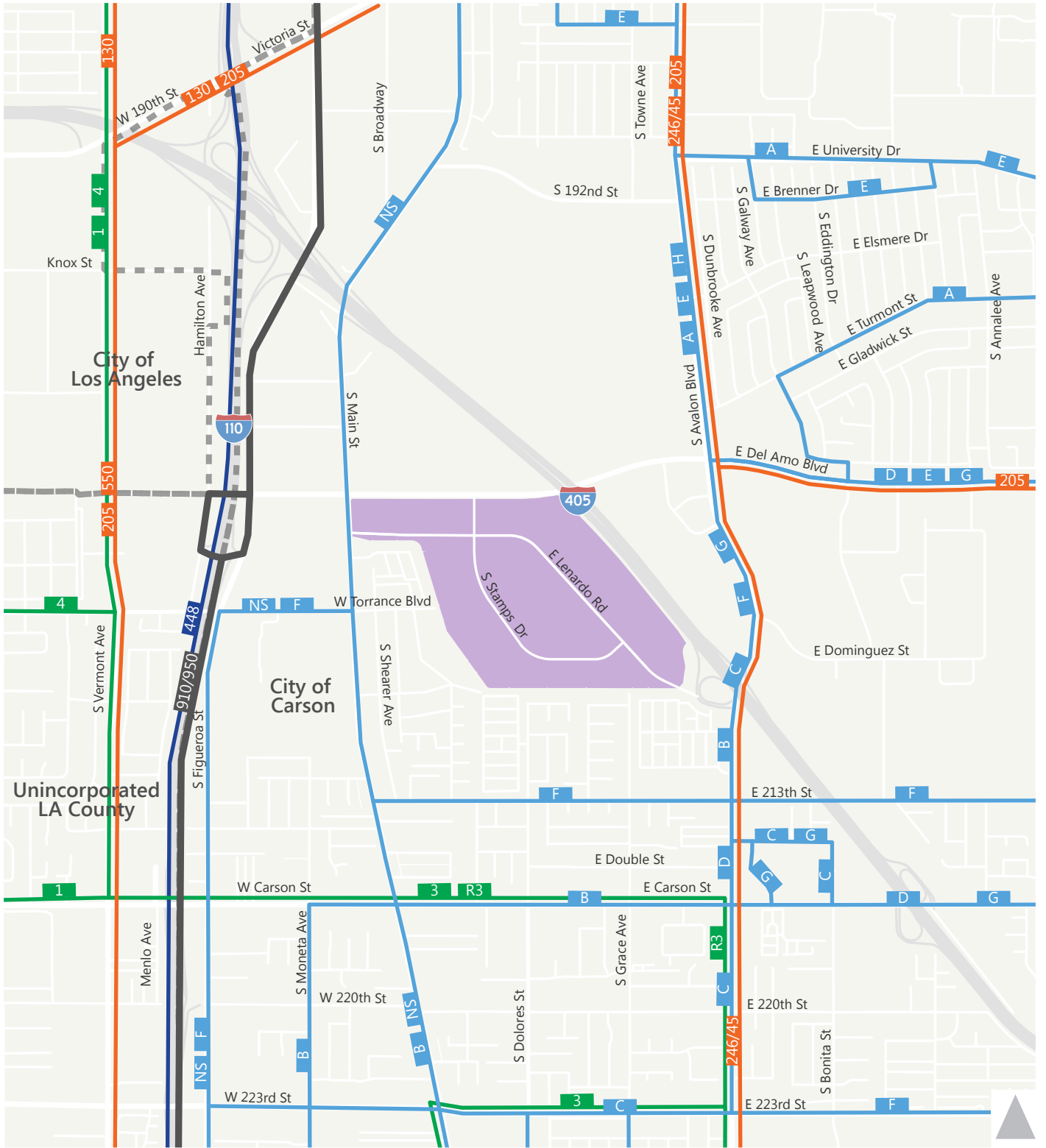
EXISTING CONSTRUCTION

Carson Street is currently undergoing the construction of the Carson Street Mixed-Use District Master Plan, which stretches from the I-110 to the I-405 freeways. The proposed streetscape improvements include a number of streetscape improvements, pedestrian enhancements, and bicycle improvements. The following intersections are affected for the duration of the construction of the Master Plan:

23. Figueroa Street & Carson Street
24. Main Street & Carson Street
25. Avalon Boulevard & Carson Street
26. I-405 southbound ramps & Carson Street

The aforementioned changes were not anticipated or under construction when the approved Project traffic study was being prepared.





- Project Site
- City Boundaries
- Metro Local
- Carson Circuit
- Torrance Transit
- LADOT Commuter Express
- Metro Silver Line



Figure 3
Existing Transit

**TABLE 1
THE DISTRICT AT SOUTH BAY PROJECT
EXISTING TRANSIT SERVICE**

Transit Route	Operator	Service Type	Service From	Via	Weekday Headways	
					AM	PM
S (North South Shuttle)	Carson Circuit	Shuttle & Circulator	Artesia Transit Center	Figueora St and Main St	50 min	-
A	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Cal State Dominguez Hills	Avalon Blvd	40 min	40 min
B	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Carson High School	Avalon Blvd and Carson St	40 min	40 min
C	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Carson Civic Center	Avalon Blvd	40 min	40 min
D	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Del Amo & Wilmington	Avalon Blvd, Del Amo Blvd, Carson St	40 min	40 min
E	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Home Depot Center	Avalon Blvd and Del Amo Blvd	40 min	40 min
G	Carson Circuit	Shuttle & Circulator	South Bay Pavilion to Del Amo & Wilmington	Avalon Blvd, Del Amo Blvd, Carson St	40 min	40 min
205	Metro	Local	San Pedro to Willowbrook	Vermont Ave	20-30 min	30-50 min
246/45	Metro	Local	San Pedro to Harbor Transit Gateway Center	Avalon Blvd	20-30 min	30-40 min
550	Metro	Local	San Pedro to Exposition Park	Vermont Ave	45 min	40 min
Silver Line (950)	Metro	Busway	San Pedro to El Monte	Figueroa St and I-110 Fwy	5 min	5 min
1	Torrance Transit	Local	Harbor Transit Gateway Center to Del Amo Fashion Center	Vermont Ave	40 min	40 min
3	Torrance Transit	Local	Redondo Beach Pier to Downtown Long Beach	Carson St	25 min	20-25 min
R3	Torrance Transit	Rapid	South Bay Galleria to Downtown Long Beach	Carson St and Avalon Blvd	10-20 min	20-30 min
4	Torrance Transit	Commuter Express	Torrance to Union Station	Vermont Ave	60-75 min	30-60 min
448	LADOT	Commuter Express	Rancho Palos Verdes to Downtown Los Angeles	I-110 Fwy	15-25 min	15-30 min

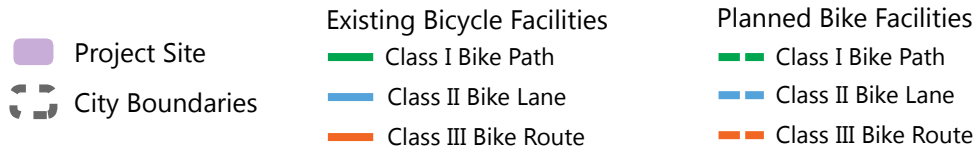
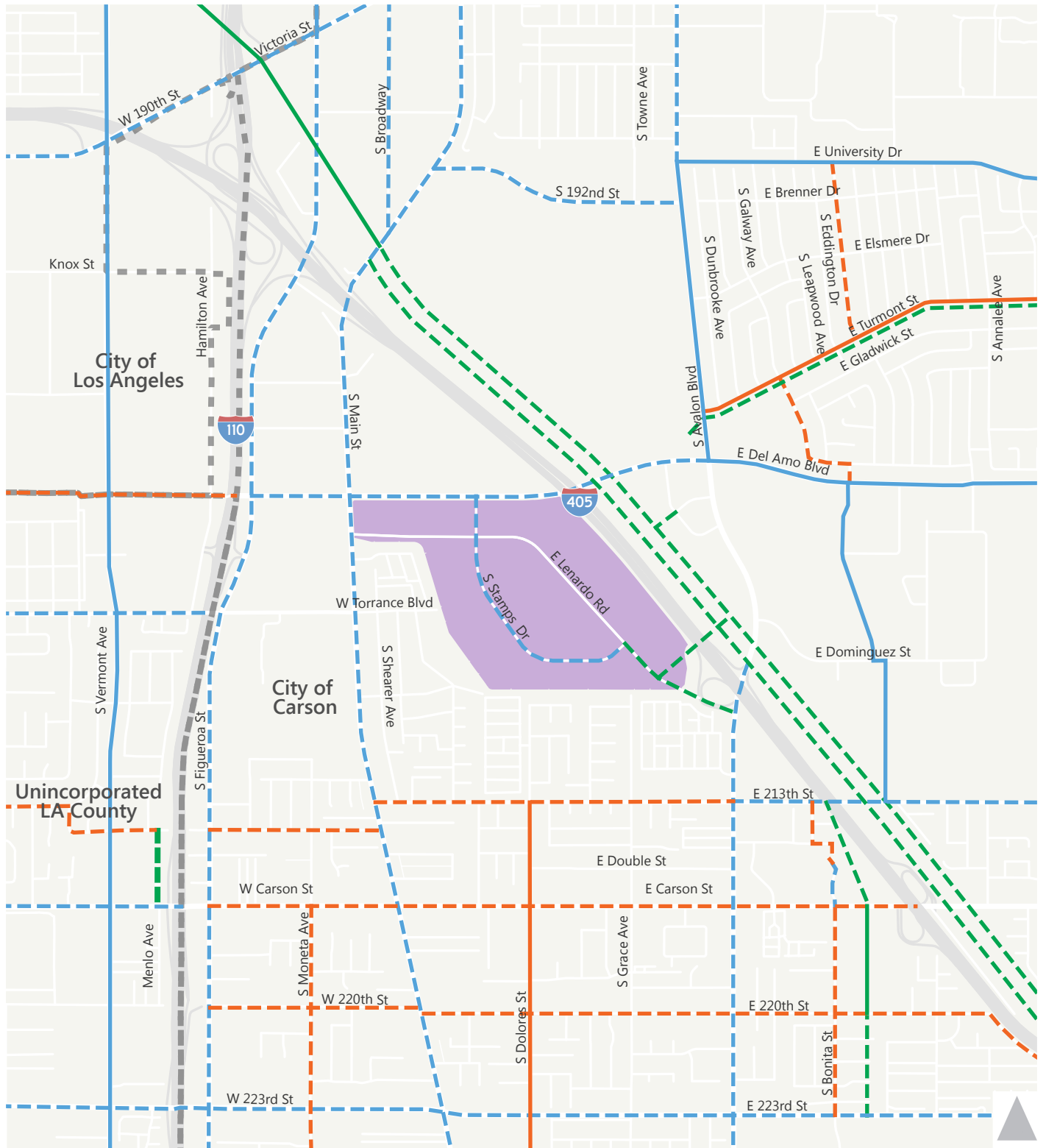


Figure 3
Existing and Planned Bicycle Facilities

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 resulting operating conditions at each, indicating volume-to-capacity (V/C) ratios and levels of service (LOS).

EXISTING TRAFFIC VOLUMES

Weekday AM and PM peak hour turning movement counts were collected at the study intersections on Wednesday, November 16, 2016. The existing weekday morning and afternoon peak hour volumes at the study intersections are provided in Appendix B. Traffic count worksheets for these intersections are contained in Appendix C. For the analysis, an ambient growth factor of 0.5% per year was applied to the Year 2016 traffic volumes to account for regional growth and represent 2017 volumes, based on regional growth patterns, the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan Model, the *2010 Congestion Management Program for Los Angeles County*, and at the direction of the City of Carson.

The transportation impact analysis for the approved Project conducted the existing year analysis based on 2005 conditions. Traffic at a majority of the study intersections has significantly increased in the past 12 years.

LEVEL OF SERVICE METHODOLOGY

The standard LOS methodology varies by jurisdiction. Study intersections are analyzed according to the methodology of the appropriate jurisdiction. If an intersection lies along a jurisdictional border and the methodology differs by jurisdiction, both methodologies are applied.

The approved study applied the City of Carson LOS methodology for all study intersections. Per the current industry standards and based on current state-of-practice methodology, the methodology used to analyze an intersection was according to the jurisdiction in which the intersection was located.

The LOS methodologies are described below by jurisdiction.

City of Carson

Per the City of Carson requirements, signalized intersections are analyzed using Intersection Capacity Utilization (ICU) method. The ICU method estimates the V/C ratio for an intersection based on the individual V/C ratios for the conflicting traffic movements. The ICU value represents the percent signal green time of capacity of the intersection movements. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing. The overall intersection V/C ratio is subsequently assigned an LOS value to describe intersection operations in Table 2A. LOS ranges from LOS A (free flow) to LOS F (jammed condition).

Unsignalized intersections in the City of Carson are analyzed using the Highway Capacity Manual (HCM) methodology to determine traffic operations. The *2010 HCM* analysis methodology describes the operation



of an intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on a range of stopped delay in seconds experienced per vehicle, shown in Table 2B.

The approved Project transportation impact analysis applied the ICU methodology for signalized intersections and the 2000 HCM analysis methodology for unsignalized intersections. The modified project analysis uses the 2010 HCM analysis methodology for unsignalized intersections within the City of Carson.

City of Los Angeles

According to *Transportation Impact Study Guidelines* (Los Angeles Department of Transportation [LADOT], December 2016), the City of Los Angeles requires the Critical Movement Analysis (CMA) method of intersection capacity calculation (Transportation Research Board, 1980) to analyze signalized intersections. The V/C ratio is then used to find the corresponding LOS based on the definitions in Table 2A. The CMA method of intersection capacity analysis determines the intersection V/C ratio and corresponding LOS for the turning movements and intersection characteristics at signalized intersections.

The City of Los Angeles does not require LOS analysis for unsignalized intersections. Rather, the *Transportation Impact Study Guidelines* states that “unsignalized intersections should be evaluated solely to determine the need for the installation of a traffic signal or other traffic control device.” Peak hour signal warrant analyses were conducted for unsignalized intersections within the City of Los Angeles.

The approved Project transportation impact analysis applied City of Carson’s methodology to analyze both signalized and unsignalized intersections including the intersections located within City of Los Angeles jurisdiction.



**TABLE 2A
LEVEL OF SERVICE DEFINITIONS FOR
CITY OF CARSON, CITY OF LOS ANGELES, AND LA COUNTY SIGNALIZED INTERSECTIONS
ICU AND CMA METHODOLOGY**

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

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

TABLE 2B
HCM LEVEL OF SERVICE DEFINITIONS FOR
CITY OF CARSON STOP-CONTROLLED INTERSECTIONS

Level of Service	Average Control 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.

Los Angeles County

The County of Los Angeles utilizes the ICU methodology for signalized intersections. All study intersections fully or partially located within the jurisdiction of the County of Los Angeles utilized the ICU methodology for intersections.

Unsignalized intersections within the County of Los Angeles require signal warrant analysis, which evaluates the need for a traffic signal. Peak hour signal warrant analyses were conducted for unsignalized intersections within Los Angeles County.

The approved Project transportation impact analysis did not apply the LOS methodology required by Los Angeles County for intersections under its jurisdiction and used the City of Carson LOS methodology for all signalized and unsignalized intersections.

EXISTING 2017 LEVELS OF SERVICE

Existing year traffic volumes presented in Appendix B were analyzed using the methodologies described above to determine the existing operating conditions at the study intersections. Table 3 summarizes the results of the analysis of the existing weekday morning and evening peak hour V/C ratio and corresponding LOS at each of the analyzed intersections. Existing LOS were analyzed with the current lane configurations under the Carson Street Mixed-Use Master Plan construction. Of the 20 existing signalized intersections, 19 intersections operate at LOS D or better during both peak periods across all analysis methodologies.

One signalized intersection is currently operating at poor levels of service, i.e., LOS E or F: No. 23. Figueroa Street & Carson Street (AM & PM Peak Hours).

Of the two unsignalized intersections within the City of Carson, one intersection is currently operating at poor levels of service, i.e., LOS E or F: No. 2. Figueroa Street & I-405 northbound off-ramp (LOS F during both AM & PM Peak Hours).

As stated in the methodology section, only unsignalized intersections within the City of Carson are evaluated for LOS operations; unsignalized intersections within Los Angeles County and within the City of Los Angeles are not evaluated for LOS operations.

Detailed LOS analysis sheets for the modified Project are provided in Appendix D.



**TABLE 3
THE DISTRICT AT SOUTH BAY PROJECT
EXISTING CONDITIONS INTERSECTION LEVELS OF SERVICE**

ID	N/S Street Name	E/W Street Name	Intersection Control	Jurisdiction [1]	Analyzed Period	Existing	
						V/C or Delay (s)	LOS
1	Figueroa St	I-405 SB On Ramp	Unsignalized	City of Carson	AM	0.9	B
					PM	7.9	C
2	Figueroa St	I-405 NB Off Ramp	TWSC	City of Carson	AM	143.3	F
					PM	84.6	F
3	S Main St	I-405 SB On Ramp	Signalized	City of Carson	AM	0.443	A
					PM	0.891	D
4	S Main St	I-405 NB Off Ramp	Signalized	City of Carson	AM	0.547	A
					PM	0.663	B
5	S Vermont Ave	Del Amo Blvd	Signalized	City of Los Angeles	AM	0.683	B
					PM	0.742	C
				Los Angeles County	AM	0.740	C
					PM	0.796	C
6	Hamilton Ave	Del Amo Blvd	AWSC	City of Los Angeles	AM	[1]	
					PM	[1]	
7	Figueroa St	Del Amo Blvd	Signalized	City of Carson	AM	0.828	D
					PM	0.770	C
8	S Main St	E Del Amo Blvd	Signalized	City of Carson	AM	0.694	B
					PM	0.813	D
9	Stamps Dr	Del Amo Blvd	Project Intersection Signalized	City of Carson	AM	Project Intersection	
10	S Avalon Blvd	E Del Amo Blvd	Signalized	City of Carson	AM	0.843	D
					PM	0.892	D
11	Hamilton Ave	I-110 SB Ramps	AWSC	Los Angeles County	AM	[1]	
					PM	[1]	
12	Figueroa St	I-110 NB Ramps	Signalized	Los Angeles County	AM	0.846	D
					PM	0.711	C
13	Main St	Lenardo Dr	Project Intersection Signalized	City of Carson	AM	Project Intersection	
14	Hamilton Ave	W Torrance Blvd	Signalized	Los Angeles County	AM	0.733	C
					PM	0.624	B
15	Figueroa St	W Torrance Blvd	Signalized	City of Carson	AM	0.795	C
					PM	0.782	C
16	S Main St	W Torrance Blvd	Signalized	City of Carson	AM	0.631	B
					PM	0.753	C
17	Lenardo Dr	I-405 SB Ramps	Project Intersection Signalized	City of Carson	AM	Project Intersection	
18	S Avalon Blvd	I-405 SB Ramps	Signalized	City of Carson	AM	0.631	B
					PM	0.584	A
19	S Avalon Blvd	I-405 NB Ramps	Signalized	City of Carson	AM	0.506	A
					PM	0.598	A
20	S Main St	E 213th St	Signalized	City of Carson	AM	0.807	D
					PM	0.810	D
21	S Avalon Blvd	E 213th St	Signalized	City of Carson	AM	0.640	B
					PM	0.745	C
22	S Vermont Ave	W Carson St	Signalized	Los Angeles County	AM	0.876	D
					PM	0.747	C
23	Figueroa St	W Carson St	Signalized	City of Carson	AM	0.942	E
					PM	1.063	F
24	S Main St	W Carson St	Signalized	City of Carson	AM	0.457	A
					PM	0.595	A
25	S Avalon Blvd	E Carson St	Signalized	City of Carson	AM	0.811	D
					PM	0.896	D
26	I-405 SB Ramps	E Carson St	Signalized	City of Carson	AM	0.621	B
					PM	0.667	B
27	I-405 NB Ramps	E Carson St	Signalized	City of Carson	AM	0.417	A
					PM	0.479	A

Notes

TWSC Two-Way Stop Controlled

AWSC All Way Stop Controlled

[1] Methodology varies by Jurisdiction. If an intersection is located along a City border, both methodologies are applied.

Signalized intersections within the City of Carson and Los Angeles County are analyzed with Intersection Capacity Utilization (ICU) methodology

Signalized intersections within the City of Los Angeles are analyzed with Critical Movement Analysis (CMA) methodology

Un-signalized intersections within the City of Los Angeles and Los Angeles County are not included in the impact analysis; instead, signal warrant analyses are conducted

Un-signalized intersections within the City of Carson are analyzed with HCM 2010, if the worst approach LOS is E or F, then impacts are determined based on ICU v/c

[2] Existing analysis evaluates LOS under construction lane configurations, future analysis assumes post-construction lane configurations

3. TRAFFIC PROJECTIONS

PROJECT TRAFFIC

The development of trip generation estimates for the proposed modified Project involves the use of a 3-step process similar to that discussed for the cumulative projects: trip generation, trip distribution, and traffic assignment.

PROJECT TRIP GENERATION

As indicated in Chapter 1, the proposed modified Project would include the construction of 1,250 residential units, 350 hotel rooms, and a total of 1,486,020 gross leasable area (1,601,500 gross building area) square feet of commercial and restaurant space.

Trip generation rates from *Trip Generation, 9th Edition* (Institute of Transportation Engineers [ITE], 2012) were used to estimate the number of trips associated with the modified Project and are presented in Table 4. As described below, a number of reductions were applied to the standard ITE rates to account for internal trip capture, transit/walk/bike credits, and pass-by trips. The trip generation rate for the luxury outlet shops is lower than for the general retail shopping center to account for the trip reduction associated with specific trip making characteristics associated with outlets shops such as charter buses that will be included as part of the modified Project implementation.

Trip reductions were informed by the MainStreet Mixed-Use Trip Generation Methodology. MainStreet is an application which uses the MXD (mixed-use) trip generation methodology to estimate the modified Project trip generation by calibrating the ITE trip generation estimates to reflect the site-specific and regional characteristics of the Project site.



**TABLE 4
THE DISTRICT AT SOUTH BAY PROJECT
PROJECT TRIP GENERATION ESTIMATE**

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]									Estimated Trip Generation					
			Daily Rate	AM Peak Hour			PM Peak Hour			Trip Rate Unit	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Rate	% In	% Out	Rate	% In	% Out			In	Out	Total	In	Out	Total
Shopping Center	820	635,000 ksf	[e]	[e]	62%	38%	[e]	48%	52%	per ksf	22,581	298	183	481	992	1,075	2,067
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(226)	(3)	(2)	(5)	(10)	(11)	(21)
Internal capture [c]			10%		10%	10%		20%	20%		(2,236)	(30)	(18)	(48)	(196)	(213)	(409)
Total Driveway Trips											20,119	265	163	428	786	851	1,637
Pass-by credit [d]			10%		10%	10%		10%	10%		(2,012)	(27)	(16)	(43)	(79)	(85)	(164)
Net New Trips											18,107	238	147	385	707	766	1,473
Luxury Outlet Shops [h]	823	581,020 ksf	26.59	0.67	73%	27%	2.29	47%	53%	per ksf	15,449	284	105	389	626	705	1,331
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(154)	(3)	(1)	(4)	(6)	(7)	(13)
Internal capture [c]			10%		10%	10%		20%	20%		(1,530)	(28)	(10)	(38)	(124)	(140)	(264)
Total Driveway Trips											13,765	253	94	347	496	558	1,054
Pass-by credit [d]			10%		10%	10%		10%	10%		(1,377)	(25)	(9)	(34)	(50)	(56)	(106)
Net New Trips											12,388	228	85	313	446	502	948
Restaurant (High Turnover Sit-down)	932	140,000 ksf	127.15	10.81	55%	45%	9.85	60%	40%	per ksf	17,801	832	681	1,513	827	552	1,379
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(178)	(8)	(7)	(15)	(8)	(6)	(14)
Internal capture [c]			20%		10%	10%		30%	30%		(3,525)	(82)	(67)	(149)	(246)	(164)	(410)
Total Driveway Trips											14,098	742	607	1,349	573	382	955
Pass-by credit [d]			10%		10%	10%		10%	10%		(1,410)	(74)	(61)	(135)	(57)	(38)	(95)
Net New Trips											12,688	668	546	1,214	516	344	860
Multiplex Movie Theater	443/445 [f]	2,500 Seats 80,000 KSF	1.76	0.010	60%	40%	0.10	60%	40%	per seat	4,400	15	10	25	150	100	250
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(44)	0	0	0	(2)	(1)	(3)
Internal capture [c]			10%		10%	10%		10%	10%		(436)	(2)	(1)	(3)	(15)	(10)	(25)
Total Driveway Trips											3,920	13	9	22	133	89	222
Pass-by credit [d]			10%		0%	0%		10%	10%		(392)	0	0	0	(13)	(9)	(22)
Net New Trips											3,528	13	9	22	120	80	200
Multipurpose Recreational Facility	435 [g]	25,000 KSF	59.67	1.181	80%	20%	3.58	55%	45%	per ksf	1,492	24	6	30	50	40	90
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(15)	0	0	0	(1)	0	(1)
Internal capture [c]			20%		0%	0%		20%	20%		(295)	0	0	0	(10)	(8)	(18)
Total Driveway Trips											1,182	24	6	30	39	32	71
Pass-by credit [d]			10%		0%	0%		10%	10%		(118)	0	0	0	(4)	(3)	(7)
Net New Trips											1,064	24	6	30	35	29	64
Bowling Alley	437	25,000 KSF	33.33	3.130	60%	40%	3.54	55%	45%	per ksf	833	47	31	78	49	40	89
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(8)	0	0	0	0	0	0
Internal capture [c]			20%		0%	0%		20%	20%		(165)	0	0	0	(10)	(8)	(18)
Total Driveway Trips											660	47	31	78	39	32	71
Pass-by credit [d]			10%		0%	0%		10%	10%		(66)	0	0	0	(4)	(3)	(7)
Net New Trips											594	47	31	78	35	29	64
Hotel	310	350 rooms	8.17	0.53	59%	41%	0.60	51%	49%	per room	2,860	110	76	186	107	103	210
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(29)	(1)	(1)	(2)	(1)	(1)	(2)
Internal capture [c]			20%		10%	10%		30%	30%		(566)	(11)	(8)	(19)	(32)	(31)	(63)
Total Driveway Trips											2,265	98	67	165	74	71	145
Net New Trips											2,265	98	67	165	74	71	145
Residential	220	1,250 DU	6.65	0.51	20%	80%	0.62	65%	35%	per DU	8,313	128	510	638	504	271	775
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(83)	(1)	(5)	(6)	(5)	(3)	(8)
Internal capture [c]			20%		10%	10%		30%	30%		(1,646)	(13)	(51)	(64)	(150)	(80)	(230)
Total Driveway Trips											6,584	114	454	568	349	188	537
Net New Trips											6,584	114	454	568	349	188	537
Project Total											73,729	1,738	1,602	3,340	3,305	2,886	6,191
Transit, Walk, Bike credit [b]											(737)	(16)	(16)	(32)	(33)	(29)	(62)
Internal capture [c]											(10,399)	(166)	(155)	(321)	(783)	(654)	(1,437)
Total Driveway Trips											62,593	1,556	1,431	2,987	2,489	2,203	4,692
Pass-by credit [d]											(5,375)	(126)	(86)	(212)	(207)	(194)	(401)
Project Total Trips											57,218	1,430	1,345	2,775	2,282	2,009	4,291

Notes:

- Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, 2012, unless otherwise noted.
- A transit/walk/bike credit was informed by the built environment and walkability, local transit service, and on the results of MXD 2.0 Mixed Use Trip Generation Methodology to account for transit, walking, and biking access to the project site.
- Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by MXD 2.0 Mixed Use Trip Generation Methodology, which incorporated the findings of NCHRP Project 8-51 as described in "Improved Estimation for Internal Trip Capture for Mixed-use Developments," ITE Journal, August 2010.
- Pass-by credits were informed by ITE pass-by rates and the City of Los Angeles Traffic Study Guideline Pass-by recommendations. Rates were considered reasonable given the location of the site along a major regional thoroughfare.
- ITE Shopping Center trip generation equations used rather than trip generation rate:
 Daily: $\ln(T) = 0.65 * \ln(X) + 5.83$, where T = trips, X = area in ksf
 AM Peak Hour: $\ln(T) = 0.61 * \ln(X) + 2.24$, where T = trips, X = area in ksf
 PM Peak Hour: $\ln(T) = 0.67 * \ln(X) + 3.31$, where T = trips, X = area in ksf
- ITE rates for Multiplex Movie Theater (445) for Friday PM peak hour of adjacent streets were used for the PM Peak hour analysis
 Multiplex Movie Theater rate not available for Daily or AM analysis, ITE rates for Movie Theater without Matinee (443) were used for Daily and AM
- Weekday daily and AM peak hour rates not available from ITE. Weekday PM peak hour trips assumed to be 6% of the weekday daily trips, and weekday AM peak hour trips assumed to be 33% of the weekday PM peak hour trips.
- Land use is primarily luxury outlet center with other regional commercial uses; ITE factory outlet center rates were used to determine trip generation.

ITE Trip Generation methodology is primarily based on data collected at suburban, single-use, freestanding sites. These defining characteristics limit their applicability to mixed-use or multiuse development projects, such as the proposed modified Project, which is in an urban setting. The land use mix, design features, and setting of the proposed modified Project would include characteristics that influence travel behavior differently from typical single-use suburban developments. Thus, traditional data and methodologies, such as ITE, would not accurately estimate the modified Project's vehicle trip generation. In response to the limitations in the ITE methodology, and to provide a straightforward and empirically validated method of estimating vehicle trip generation at mixed-use developments, the US Environmental Protection Agency (EPA) sponsored a national study of the trip generation characteristics of multi-use sites. Travel survey data was gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions, and correlated with the characteristics of the sites and their surroundings. The findings indicate that the amount of external traffic generated is affected by a wide variety of factors including the mix of employment and residents, the overall size and density of the development, the internal connectivity for walking or driving among land uses, the availability of transit service, and the surrounding trip destinations within the immediate area outside the Project site. These characteristics were related statistically to trip behavior observed at the study development sites using statistical techniques. These statistical relationships produced equations, known as the EPA MXD model, that allows predicting external vehicle trip reduction as a function of the MXD characteristics. Applying the external vehicle trip reduction percentage to "raw trips", as predicted by ITE, produces an estimate for the number of vehicle trips traveling in or out of the site.

The MXD model has been approved for use by the EPA⁴. It has also been peer-reviewed in the ASCE Journal of Urban Planning and Development⁵, peer-reviewed in a 2012 TRB paper⁶ evaluating various smart growth trip generation methodologies recommended by SANDAG for use on mixed-use smart growth developments⁷, promoted in an American Planning Association (APA) Planning Advisory Service (PAS)⁸ which recommended it for evaluating traffic generation of mixed-use and other forms of smart growth, including in-fill and transit oriented development. It has also been used successfully in multiple certified EIRs in California.

A transit/walk/bike credit was developed and informed by the MainStreet Mixed-Use Trip Generation Methodology to account for transit, walking, and biking access to the Project site. The transit/walk/bike credit was also informed by the modified Project site plan, built environment context of the study area, and

⁴ Trip Generation Tool for Mixed-Use Developments (2012). www.epa.gov/dced/mxd_tripgeneration.html

⁵ "Traffic Generated by Mixed-Use Developments—Six-Region Study Using Consistent Built Environmental Measures." *Journal of Urban Planning and Development*, 137(3), 248–261.

⁶ Shafizadeh, Kevan et al. "Evaluation of the Operation and Accuracy of Available Smart Growth Trip Generation Methodologies for Use in California". Presented at 91st Annual Meeting of the Transportation Research Board, Washington, D.C., 2012.

⁷ SANDAG Smart Growth Trip Generation and Parking Study.

<http://www.sandag.org/index.asp?projectid=378&fuseaction=projects.detail>

⁸ Walters, Jerry et al. "Getting Trip Generation Right – Eliminating the Bias Against Mixed Use Development". American Planning Association. May 2013.



the transit availability. A 1% transit/walk/bike credit was applied to be reflective of conditions at the modified Project.

Internal trip credits can be defined as a reduction that can be applied to the trip generation estimates for individual land uses to account for trips occurring within the site between the different uses. These are trips usually made via walking within the site. The City of Carson does not have standard internal trip credit guidelines. As a result, local and national best practices were used to develop internal trip credits for the modified Project. The internal trip credit applied to the modified Project trip generation estimates are informed by the *Trip Generation Handbook, 3rd Edition* (ITE, 2014), the City of Los Angeles Transportation Impact Study Guidelines, and the MainStreet Mixed-Use Trip Generation Methodology, which incorporated the findings of NCHRP Project 8-51 as described in "Improved Estimation for Internal Trip Capture for Mixed-use Developments," ITE Journal, August 2010. Based on this analysis, a 10 to 20% internal trip capture credit was applied depending on the land use.

Lastly, pass-by credits account for the patrons making an intermediate stop on the way from an origin to a primary trip destination without a route diversion. These trips would be attracted from traffic passing the site on nearby streets. The City of Carson does not have standard pass-by credit guidelines. As a result, local and national best practices were used to develop pass-by credits for the modified Project. Pass-by credits were informed by both the ITE pass-by rates and the City of Los Angeles Transportation Impact Study Guidelines Pass-by recommendations. A 10% pass-by credit was applied to commercial and restaurant uses. This rate is considered reasonable given the location of the Project site along a major regional thoroughfare.

As shown in Table 4, the modified Project would generate an estimated net increase of 57,218 daily trips, including 2,775 trips (1,430 inbound/1,345 outbound) during the AM peak hour and 4,291 trips (2,282 inbound/2,009 outbound) during the PM peak hour.

The approved Project transportation impact analysis used trip generation Rates from *Trip Generation, 7th Edition* and estimated that the approved Project would generate approximately 68,950 daily trips, of which about 2,510 would occur in the morning peak hour and about 5,770 in the afternoon peak hour. The trip generation estimates for the modified Project are 11% higher than the approved Project's AM peak hour trip estimate and 26% lower than the approved Project's PM peak hour trip estimates.

The trip generation model used for the approved Project applied an average combined internal capture and pass-by credit of 35% for daily trips, 29% AM peak hour trips, and 37% PM peak hour trips. The trip generation model used for the modified Project applies state of the industry trip credits that are more conservative compared to the trip credits applied for the approved Project. The modified Project trip generation model applies average combined internal capture, pass-by, and transit/walk/bike credits of 22% for daily trips, 17% for AM peak hour trips, and 31% for PM peak hour trips, which were informed by the MainStreet Mixed-Use Trip Generation Methodology.

Appendix E shows an updated trip generation model for the approved Project description based on the current state-of-practice trip generation model applied to the modified Project. This update trip generation model for the approved Project estimated 68,954 daily trips, 2,759 AM peak hour trips, and 5,420 PM peak hour trips. The trip generation estimates for the modified Project are 1% higher than the updated AM peak hour trip generation for the approved Project updated trip generation and 21% lower than the updated PM peak hour trip generation for the approved Project updated trip generation.



PROJECT TRAFFIC DISTRIBUTION

The geographic distribution of traffic generated by the proposed modified Project depends on several factors. These include the type and density of the proposed land uses, the geographic distribution of population from which the patrons and employees of the modified Project retail and commercial components may be drawn, and the location of the modified Project's access points in relation to the surrounding street system. Considering those factors, three separate trip distribution patterns were developed according to the nature of the land use and the corresponding percentage of traffic likely to be regionally-oriented and using the freeway as opposed to the local street system. Figures 5A through 5C illustrate the distribution patterns for the following three groups of land uses:

- Regional commercial and hotel
- Neighborhood commercial, restaurants, and entertainment/commercial recreation
- Residential apartments and condominiums

The geographic distribution patterns for each land use group is consistent between the approved Project and modified Project analysis.

PROJECT TRAFFIC ASSIGNMENT

The traffic expected to be generated by the proposed modified Project was assigned to the street network using the distribution patterns described in Figures 5A, 5B and 5C. Appendix B shows the assignment of Project-only traffic volumes for the morning and afternoon peak hours at the 27 analyzed intersection locations.





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Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

↔ Trip Distribution

Figure 5A

**Trip Distribution
Regional Commercial and Hotel**





Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

↔ Trip Distribution

Figure 5B

Trip Distribution
Neighborhood Commercial Entertainment & Restaurants





Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

↔ Trip Distribution



Figure 5C

Trip Distribution Residential

PROJECT ONLY INTERSECTIONS

Of the 27 intersections analyzed for this study, the following three intersections are anticipated to be signalized due to the modified Project:

9. Street "B" & Del Amo Boulevard (project intersection)
13. Main Street & Street "A" (project intersection)
17. Street "A" & I-405 southbound ramps (project intersection)

These intersections were only analyzed in Project scenarios. This is consistent with the approved Project analysis.

EXISTING PLUS PROJECT TRAFFIC CONDITIONS

The modified Project traffic estimated and assigned to the study intersections was added to the existing traffic volumes to estimate Existing plus Project traffic volumes. Turning movement traffic volumes for the Existing plus Project scenario are provided in Appendix B. Analysis sheets are provided in Appendix D.

The approved Project transportation impact analysis did not include an Existing plus Project analysis scenario; however, it is included as part of the modified Project analysis as it is a standard analysis scenario for the current state of practice.

FUTURE YEAR 2023 TRAFFIC CONDITIONS

To evaluate the potential impacts of the proposed modified Project on future (Year 2023) conditions, it was necessary to develop estimates of future traffic conditions in the area both without and with modified Project traffic. First, estimates of traffic growth were developed for the study area to forecast future conditions without the modified 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 modified Project (related projects). Including both ambient growth and trips from specific projects proposed within the vicinity of the modified Project provides a conservative estimate of future traffic projections.

These projected traffic volumes, identified herein as the Future Base conditions, represent the future conditions without the proposed modified Project.

BACKGROUND OR AMBIENT GROWTH

Based on historic trends and at the direction of the City of Carson, it was established that an ambient growth factor of 0.5% per year should be applied to adjust the existing base year traffic volumes to reflect the effects of regional growth and development by year 2023. This growth factor was developed based on regional growth patterns, the Southern California Association of Governments (SCAG) 2016 Regional Transportation Plan Model, the *2010 Congestion Management Program for Los Angeles County*, and at the direction of the City of Carson. This growth factor was applied to the 2016 traffic volume data to reflect the effect of ambient growth by the year 2023. The approved Project transportation impact analysis used an ambient growth factor of 1% per year to reflect the effects of regional growth and development.



The approved Project was anticipated to be built-out by Year 2010. The ambient growth rates developed for the approved Project transportation study were developed based on review of the SCAG year 2000 and year 2015 model data and the background growth rates contained in the 2004 Congestion Management Program for Los Angeles County for the South Bay sub-region.

RELATED PROJECT TRAFFIC GENERATION AND ASSIGNMENT

Future Base traffic forecasts include the effects of known 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 modified Project. The list of related projects was prepared based on data from the City of Carson, the City of Los Angeles, and the County of Los Angeles. A total of 27 related projects were identified in the study area; these projects are listed in Table 5 and illustrated in Figure 6. The 11-acre parcel north of Del Amo Boulevard that was included in the Carson Marketplace analysis as part of the project has subsequently been entitled and has therefore been included in this analysis as a related project.

The approved Project transportation impact analysis identified a total of 36 related projects in the vicinity of the study area. These projects were expected to generate approximately 70,850 daily vehicle trips, of which about 4,420 trips would occur during the morning peak hour and 6,880 trips would occur during the afternoon peak hour. The number of related projects is directly related to the development projects being processed by the City and varies over time.

Related project trips for the approved Project were quantified and assigned according the same methodology (described below).

Trip Generation

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 *Trip Generation, 9th Edition*. Table 5 presents the resulting trip generation estimates for these related projects. These trip generation 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.). Traffic mitigation measures associated with the related projects are also not in every case accounted for in the analysis.

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. Additionally, if the traffic study or environmental document for a related project was available, the trip distribution from that study was used.

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



**TABLE 5
THE DISTRICT AT SOUTH BAY PROJECT
RELATED PROJECTS**

No.	Project Location	Land Use	Size	Trip Generation						
				Daily	AM			PM		
					IN	OUT	TOTAL	IN	OUT	TOTAL
1	21801 Vera St	Houses	18 du	171	3	10	14	11	7	18
2	21721 Moneta Ave	Apartments	13 du	86	1	5	7	5	3	8
3	21521 S Avalon Blvd	Apartments	357 du	3,685	54	156	210	199	137	335
		Retail	30.7 ksf							
4	1802 E Carson St	Coffee Shop w/Drive-Through	1.5 ksf	1,228	77	74	151	32	32	64
5	1281 E University Dr	Retail	47 ksf	2,007	27	16	43	84	91	174
6	16100 S Avalon Blvd	Warehouse	44 ksf	157	10	3	13	4	11	14
7	2254 E 223rd St	Warehouse	120.5 ksf	429	29	8	36	10	29	39
8	200 E Alondra Blvd	Warehouse	137 ksf	598	46	11	57	13	45	59
		Office	10 ksf							
9	21900 S Wilmington	Warehouse	400.0 ksf	1,424	95	25	120	32	96	128
10	21205 S Main St	Apartments	46 du	306	5	19	23	19	10	29
11	600 W Carson	Apartments	51 du	339	5	21	26	21	11	32
12	17706 S Main St	Warehouse	94.731 ksf	503	43	9	52	11	41	53
		Office	15 ksf							
13	2666 E Dominguez St	Houses	3 du	29	1	2	2	2	1	3
14	140 W 223rd St	Apartments	2 du	13	0	1	1	1	0	1
15	123 E 223rd St	Apartments	10 du	36	2	1	3	1	2	3
16	21000 S Normandie Ave [b]	Apartments	113 du	784	10	41	51	42	23	65
17	19210 S Vermont Ave	Office	61.5 ksf	677	84	11	95	16	76	92
18	1302 W 177th St [b]	Apartments	131 du	952	15	58	73	56	30	86
		Community Center	3.5 ksf							
19	21138 S Western Ave [b]	Gas Station	12 Fuel Pumps	1,461	56	48	104	52	51	103
20	1054 W 204th St [a] [c]	Park	8.5 Acres	425	3	3	6	2	2	4
21	22410 S Vermont Ave [c]	Apartments	41 du	273	4	17	21	17	9	25
22	20416 Kenwood Ave [c]	Houses	2 du	19	0	1	2	1	1	2
23	20814 Normandie Ave [c]	Houses	63.0 du	600	12	35	47	40	23	63
24	19606 Normandie Ave [c]	Warehouse	13.4 ksf	48	3	1	4	1	3	4
25	22003 Meyler St [c]	Houses	1 du	10	0	1	1	1	0	1
26	939 W 223rd St [c]	Warehouse	5.82 ksf	21	1	0	2	0	1	2
27	Development District #3 (11 acres) [d]	Houses	300 DU	1,580	27	109	136	84	45	129
Total				17,860	615	686	1,300	755	781	1,536

Notes:

du = dwelling unit

ksf = one thousand square feet

Related projects list is based on information provided by the City of Carson, unless otherwise noted.

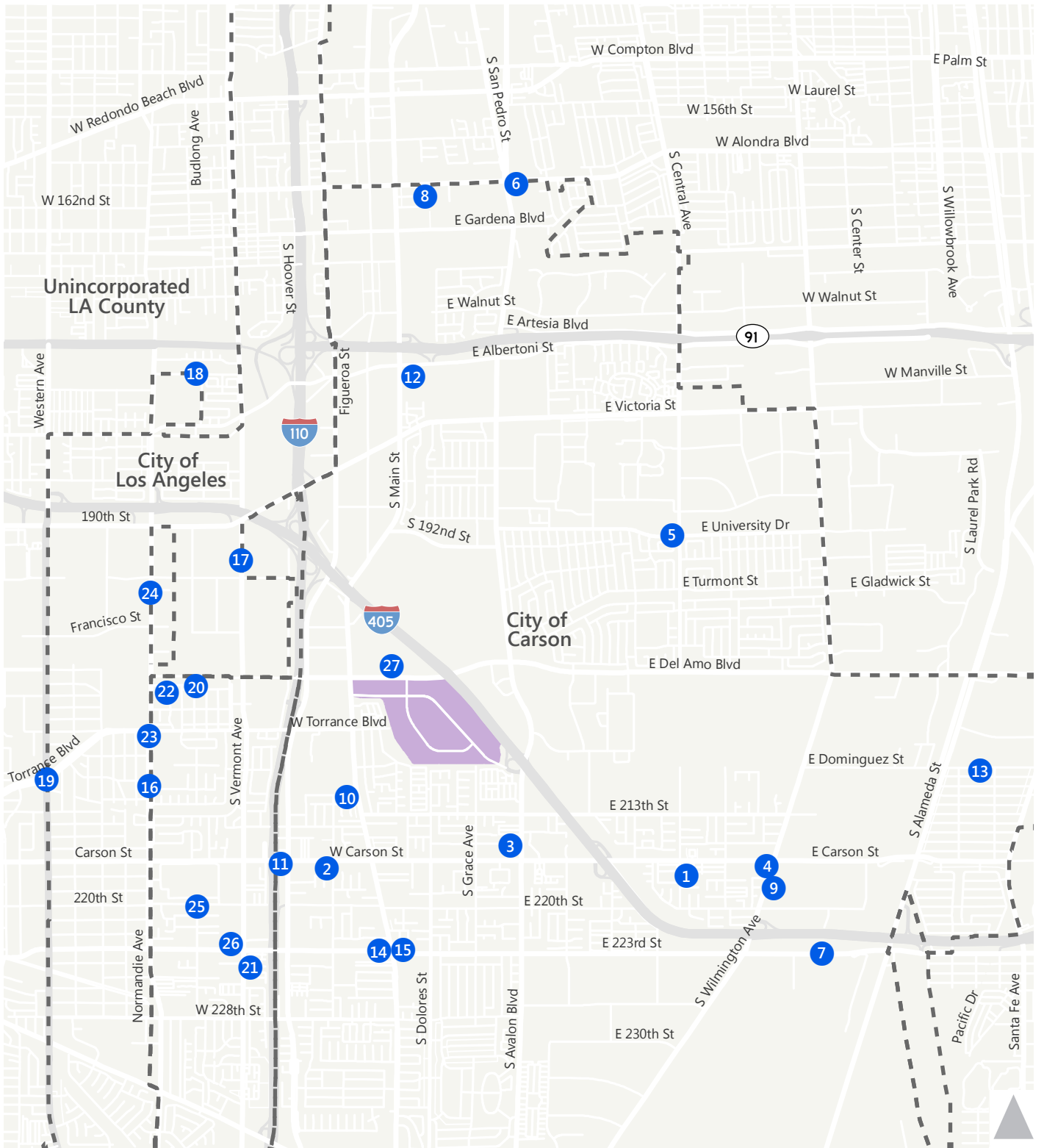
Trip generation estimates based on information provided by LADOT if available. Other rates found from *Trip Generation*, 9th Edition, Institute of Transportation Engineers, 2012.

[a] Trip generation estimates for parks based on information provided by the "Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002

[b] Related projects provided by LADOT on June 27th

[c] Related projects provided by LA County on July 11th

[d] The 11 acre parcel north of Del Amo was previously included in the Carson Marketplace Project but was sold separately and is not longer part of modified project description for THE DISTRICT AT SOUTH BAY.



- Project Site
- Related Project
- City Boundaries



Figure 6
Related Projects

TRANSPORTATION INFRASTRUCTURE PROJECTS

The Carson Street Mixed-Use Master Plan, as mentioned in Chapter 2, is currently under construction and will be completed by 2023. Therefore, the infrastructure changes along Carson Street, specifically new lane configurations for four intersections in the study area, were included in the analysis. The proposed streetscape improvements include drought tolerant streetscape improvements, trees, LED lighting, seating areas for pedestrians, crosswalk enhancements, street furniture, way-finding signage, and bicycle improvements on a 1.75-mile stretch of Carson Street between the I-110 and I-405 freeways. The improvements also include traffic signal modifications, reconfiguration of turn lanes, and reconstruction of driveways for ADA compliance. Future year lane configurations are provided in Appendix B.

No construction was planned or occurring along Carson Street during the preparation of the approved Project transportation impact analysis.

FUTURE YEAR 2023 BASE TRAFFIC VOLUMES

Future year 2023 Base weekday AM and PM peak hour traffic volumes and lane geometries for the analyzed intersections are provided in Appendix B. The Future Base traffic conditions represent an estimate of future conditions without the proposed modified Project inclusive of the ambient background growth and related projects traffic.

FUTURE PLUS PROJECT TRAFFIC PROJECTIONS

The proposed modified Project traffic volumes were added to the year 2023 Future Base traffic projections, resulting in Future (year 2023) plus Project AM and PM peak hour traffic volumes. The Future (year 2023) plus Project scenario presents future traffic conditions with the completion of the proposed modified Project. Appendix B shows the lane configurations and volumes analyzed as part of the Future plus Project scenario.



4. INTERSECTION TRAFFIC IMPACT ANALYSIS

The traffic impact analysis evaluates the projected LOS at each study intersection under the Existing plus Project and Future (year 2023) plus Project conditions to estimate the incremental increase in the V/C ratio caused by the proposed modified Project. This provides the information needed to assess the potential impact of the modified Project using significance criteria established by the City of Carson, LADOT, and Los Angeles County.

CRITERIA FOR DETERMINATION OF SIGNIFICANT TRAFFIC IMPACT

SIGNALIZED INTERSECTIONS

City of Carson

The City of Carson has established threshold criteria to determine significant traffic impact of a proposed project in its jurisdiction. A signalized intersection would be significantly impacted with an increase in V/C ratio equal to or greater than 0.02 for intersections operating at LOS E or F after the addition of project traffic. Intersections operating at LOS A, B, C, or D after the addition of project traffic are not considered significantly impacted regardless of the increase in V/C ratio. The following summarizes the significant impact criteria:

City of Carson Traffic Impact Criteria, Signalized Intersections		
LOS	Final V/C Ratio	Project-Related Increase in V/C
E or F	> 0.900	equal to or greater than 0.020

The approved Project transportation impact analysis utilized the City of Carson LOS methodology for all study intersections and used the above criteria to determine if an intersection was significantly impacted or not.



City of Los Angeles

Under the LADOT guidelines, a signalized intersection in the City of Los Angeles would be significantly impacted with an increase in V/C ratio equal to or greater than 0.04 for intersections operating at LOS C, equal to or greater than 0.02 for intersections operating at LOS D, and equal to or greater than 0.01 for intersections operating at LOS E or F after the addition of project traffic. Intersections operating at LOS A or B after the addition of the modified Project traffic are not considered significantly impacted regardless of the increase in V/C ratio.

LADOT Traffic Impact Criteria, Signalized Intersections		
LOS	Final V/C Ratio	Project-Related Increase in V/C
C	> 0.700 - 0.800	equal to or greater than 0.040
D	> 0.800 - 0.900	equal to or greater than 0.020
E or F	> 0.900	equal to or greater than 0.010

The approved Project transportation impact analysis did not customize the LOS methodology by jurisdiction and did not apply the City of Los Angeles LOS methodology or its significant impact criteria for intersections located within City of Los Angeles' jurisdiction.

Los Angeles County

The County of Los Angeles utilizes the criteria defined in their *Traffic Impact Analysis Report Guidelines* to assess project impacts:

Los Angeles County Traffic Impact Criteria, Signalized Intersections		
LOS	Pre-Project V/C Ratio	Project-Related Increase in V/C
C	> 0.700 - 0.800	equal to or greater than 0.040
D	> 0.800 - 0.900	equal to or greater than 0.020
E or F	> 0.900	equal to or greater than 0.010

The approved Project transportation impact analysis did not customize the LOS methodology by jurisdiction and did not apply the Los Angeles County LOS methodology or its significant impact criteria for intersections located within the County's jurisdiction.



UNSIGNALIZED INTERSECTIONS

For an unsignalized intersection in the City of Carson, intersections operating at LOS A, B, C, or D after the addition of project traffic are not considered significantly impacted regardless of the increase in delay or V/C ratio. For unsignalized intersections operating at a delay based LOS of E or F under with project conditions, an intersection is determined to be significantly impacted if the modified Project-related increase in ICU V/C is 0.02 or greater:

City of Carson Traffic Impact Criteria, Unsignalized Intersections		
LOS (HCM)	Final V/C Ratio	Project-Related Increase in V/C
E or F	> 0.900	equal to or greater than 0.020

Traffic study guidelines for the City of Los Angeles and Los Angeles County do not have LOS or significant impact thresholds for unsignalized intersections and require a signal warrant analysis only. The approved Project transportation impact analysis did not customize the LOS methodology by jurisdiction and did not apply the City of Los Angeles or Los Angeles County LOS methodology or significant impact criteria for intersections located within City of Los Angeles' jurisdiction.

EXISTING PLUS PROJECT IMPACT ANALYSIS

EXISTING PLUS PROJECT TRAFFIC LEVEL OF SERVICE

The Existing plus Project traffic volumes presented in Appendix B were analyzed to determine the projected V/C ratios and LOS for each of the analyzed signalized intersections under this scenario. Table 6 summarizes the Existing plus Project LOS. Analysis sheets are provided in Appendix D. As indicated in Table 6, 14 of the 25 analyzed with Project intersections are projected to operate at an acceptable level of service, i.e., LOS D or better, during both morning and evening peak hours.

Under the Existing plus Project scenario, with the full implementation of the modified Project, the following 10 signalized intersections are projected to operate at poor levels of service, i.e., LOS E or F:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour)
5. Vermont Avenue & Del Amo Boulevard (AM & PM Peak Hour, ICU analysis only)
7. Figueroa Street & Del Amo Boulevard (AM & PM Peak Hours)
8. Main Street & Del Amo Boulevard (PM Peak Hour)
10. Avalon Boulevard & Del Amo Boulevard (AM & PM Peak Hours)
12. Figueroa Street & I-110 northbound ramps (AM & PM Peak Hours)
20. Main Street & 213th Street (PM Peak Hour)
22. Vermont Avenue & Carson Street (AM & PM Peak Hour)
23. Figueroa Street & Carson Street (AM & PM Peak Hours)
25. Avalon Boulevard & Carson Street (PM Peak Hour)



**TABLE 6
THE DISTRICT AT SOUTH BAY PROJECT
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS AND MITIGATIONS**

ID	N/S Street Name	E/W Street Name	Intersection Control	Jurisdiction [1,3]	Analyzed Period	Existing		Existing + Project		Project Increase In V/C or Delay (s)	Significant Impact?	Existing + Project + Mitigations		Project Increase In V/C or Delay (s)	Significant Impact?
						V/C or Delay (s)	LOS	V/C or Delay (s)	LOS			V/C or Delay (s)	LOS		
1	Figueroa St	I-405 SB On Ramp	Unsignalized	City of Carson/ Caltrans	AM	0.9	B	0.9	B	0.0	NO				
					PM	7.9	C	8.5	D	0.6	NO				
2	Figueroa St	I-405 NB Off Ramp	TWSC	City of Carson/ Caltrans	AM	143.3	F	165.4	F	22.1	[1]				
					PM	84.6	F	98.3	F	13.7	[1]				
3	S Main St	I-405 SB On Ramp	Signalized	City of Carson/ Caltrans	AM	0.718	[1]	0.729	[1]	0.011	NO				
					PM	0.907	[1]	0.923	[1]	0.016	NO	0.447	A	0.004	NO
4	S Main St	I-405 NB Off Ramp	Signalized	City of Carson/ Caltrans	AM	0.443	A	0.472	A	0.029	NO	0.721	C	-0.170	NO
					PM	0.891	D	0.929	E	0.038	YES				
5	S Vermont Ave	Del Amo Blvd	Signalized	City of Los Angeles	AM	0.547	A	0.578	A	0.031	NO				
					PM	0.663	B	0.701	C	0.038	NO				
5	S Vermont Ave	Del Amo Blvd	Signalized	Los Angeles County	AM	0.683	B	0.768	C	0.085	YES	0.654	B	-0.029	NO
					PM	0.742	C	0.886	D	0.144	YES	0.731	C	-0.011	NO
6	Hamilton Ave	Del Amo Blvd	AWSC	City of Los Angeles	AM	0.740	C	0.819	D	0.079	YES	0.682	B	-0.058	NO
					PM	0.796	C	0.930	E	0.134	YES	0.768	C	-0.028	NO
7	Figueroa St	Del Amo Blvd	Signalized	City of Carson	AM	[1]					[1]				
					PM	0.828	D	0.968	E	0.140	YES	0.867	D	0.039	NO
8	S Main St	E Del Amo Blvd	Signalized	City of Carson	AM	0.770	C	1.241	F	0.471	YES	0.972	E	0.202	YES
					PM	0.694	B	0.852	D	0.158	NO	0.777	C	0.083	NO
9	Stamps Dr	Del Amo Blvd	Project Intersection Signalized	City of Carson	AM	0.813	D	1.028	F	0.215	YES	0.852	D	0.039	NO
					PM	0.586	A	0.586	A	Project Intersection					
10	S Avalon Blvd	E Del Amo Blvd	Signalized	City of Carson	AM	0.843	D	0.926	E	0.083	YES	0.816	D	-0.027	NO
					PM	0.892	D	0.993	E	0.101	YES	0.901	E	0.009	NO
11	Hamilton Ave	I-110 SB Ramps	AWSC	Los Angeles County/ Caltrans	AM	[1]					[1]				
					PM	0.846	D	1.009	F	0.163	YES	0.741	C	-0.105	NO
12	Figueroa St	I-110 NB Ramps	Signalized	Los Angeles County/ Caltrans	AM	0.711	C	1.018	F	0.307	YES	0.736	C	0.025	NO
					PM	0.482	A	0.482	A	Project Intersection					
13	Main St	Lenardo Dr	Project Intersection Signalized	City of Carson	AM	Project Intersection		0.482	A	Project Intersection					
					PM	0.581	A	Project Intersection							
14	Hamilton Ave	W Torrance Blvd	Signalized	Los Angeles County	AM	0.733	C	0.746	C	0.013	NO				
					PM	0.624	B	0.655	B	0.031	NO				
15	Figueroa St	W Torrance Blvd	Signalized	City of Carson	AM	0.795	C	0.852	D	0.057	NO				
					PM	0.782	C	0.874	D	0.092	NO				
16	S Main St	W Torrance Blvd	Signalized	City of Carson	AM	0.631	B	0.710	C	0.079	NO				
					PM	0.753	C	0.827	D	0.074	NO				
17	Lenardo Dr	I-405 SB Ramps	Project Intersection Signalized	City of Carson/ Caltrans	AM	Project Intersection		0.565	A	Project Intersection					
					PM	0.501	A	Project Intersection							
18	S Avalon Blvd	I-405 SB Ramps	Signalized	City of Carson/ Caltrans	AM	0.631	B	0.682	B	0.051	NO				
					PM	0.584	A	0.687	B	0.103	NO				
19	S Avalon Blvd	I-405 NB Ramps	Signalized	City of Carson/ Caltrans	AM	0.506	A	0.575	A	0.069	NO				
					PM	0.598	A	0.794	A	0.196	NO				
20	S Main St	E 213th St	Signalized	City of Carson	AM	0.807	D	0.867	D	0.060	NO	0.678	B	-0.129	NO
					PM	0.810	D	0.906	E	0.096	YES	0.803	D	-0.007	NO
21	S Avalon Blvd	E 213th St	Signalized	City of Carson	AM	0.640	B	0.676	B	0.036	NO				
					PM	0.745	C	0.801	C	0.056	NO				
22	S Vermont Ave	W Carson St	Signalized	Los Angeles County	AM	0.876	D	0.901	E	0.025	YES	0.803	D	-0.073	NO
					PM	0.747	C	0.794	C	0.047	YES	0.732	C	-0.015	NO
23	Figueroa St	W Carson St	Signalized	City of Carson	AM	0.942	E	1.013	F	0.071	YES	0.693	B	-0.249	NO
					PM	1.063	F	1.172	F	0.109	YES	0.696	B	-0.367	NO
24	S Main St	W Carson St	Signalized	City of Carson	AM	0.457	A	0.546	A	0.089	NO				
					PM	0.595	A	0.679	B	0.084	NO				
25	S Avalon Blvd	E Carson St	Signalized	City of Carson	AM	0.811	D	0.899	D	0.088	NO	0.785	C	-0.026	NO
					PM	0.896	D	0.996	E	0.100	YES	0.904	E	0.008	NO
26	I-405 SB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.621	B	0.621	B	0.000	NO				
					PM	0.667	B	0.667	B	0.000	NO				
27	I-405 NB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.417	A	0.441	A	0.024	NO				
					PM	0.479	A	0.504	A	0.025	NO				

Notes
 TWSC Two-Way Stop Controlled
 AWSC All Way Stop Controlled
 [1] Methodology varies by Jurisdiction. If an intersection is located along a City border, both methodologies are applied.
 Signalized intersections within the City of Carson and Los Angeles County are analyzed with ICU methodology but have different impact thresholds based on jurisdiction
 Signalized intersections within the City of Los Angeles are analyzed with CMA methodology
 Un-signalized intersections within the City of Los Angeles and Los Angeles County are not included in the impact analysis; instead, signal warrant analyses are conducted
 Un-signalized intersections within the City of Carson are analyzed with HCM 2010, if the worst approach LOS is E or F, then impacts are determined based on ICU v/c
 [2] Existing analysis evaluates LOS under construction lane configurations, future analysis assumes post-construction lane configurations
 [3] Not all mitigations modeled are feasible. Mitigations at intersections under the jurisdiction of the City of Los Angeles, Los Angeles County, or Caltrans will require further coordination and detailed design review with the relevant jurisdiction to determine the feasibility of the mitigation. Any mitigation that is determined to be infeasible would be determined to be significant and unavoidable.

Under the Existing plus Project scenario, one unsignalized intersection is projected to operate at poor levels of service, i.e., LOS E or F: 2. Figueroa Street & I-405 northbound off-ramp (AM & PM Peak Hours).

Detailed LOS analysis sheets for the modified Project are provided in Appendix D.

EXISTING PLUS PROJECT INTERSECTION IMPACTS

Table 6 shows that the proposed modified Project would create significant traffic impacts at the following 10 intersections:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour)
5. Vermont Avenue & Del Amo Boulevard (AM and PM Peak Hours)
7. Figueroa Street & Del Amo Boulevard (AM and PM Peak Hours)
8. Main Street & Del Amo Boulevard (PM Peak Hour)
10. Avalon Boulevard & Del Amo Boulevard (AM and PM Peak Hours)
12. Figueroa Street & I-110 northbound ramps (AM and PM Peak Hours)
20. Main Street & 213th Street (PM Peak Hour)
22. Vermont Avenue & Carson Street (AM and PM Peak Hours)
23. Figueroa Street & Carson Street (AM and PM Peak Hours)
25. Avalon Boulevard & Carson Street (PM Peak Hour)

The approved Project transportation impact analysis did not include an Existing plus Project LOS analysis or existing year impact analysis.

Some of the significantly impacted intersections, under Existing plus Project scenario, are located on the edge of the study area. A discussion of significant impacts at the edge of the study area is included under the Future plus Project impact discussion.



FUTURE PLUS PROJECT IMPACT ANALYSIS

FUTURE BASE TRAFFIC LEVEL OF SERVICE

The year 2023 Future Base peak hour traffic volumes were analyzed to determine the projected V/C ratio and LOS for each of the analyzed intersections. Table 7 summarizes the future LOS. Seventeen of the 22 intersections analyzed for impacts are projected to operate at LOS D or better during the morning and afternoon peak hours under Future Base conditions.

The following four signalized intersections are projected to operate at poor levels of service, i.e., LOS E or F:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour)
10. Avalon Boulevard & Del Amo Boulevard (PM Peak Hour)
22. Vermont Avenue & Carson Street (AM Peak Hour)
25. Avalon Boulevard & Carson Street (PM Peak Hours)

One unsignalized intersection is projected to operate at poor levels of service, i.e., LOS F: No. 2. Figueroa Street & I-405 northbound off-ramp (AM & PM Peak Hours).

Detailed LOS analysis sheets are provided in Appendix D.



**TABLE 7
THE DISTRICT AT SOUTH BAY PROJECT
FUTURE YEAR (2023) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS AND MITIGATIONS**

ID	N/S Street Name	E/W Street Name	Intersection Control	Jurisdiction [1,3]	Analyzed Period	Future		Future + Project		Project Increase In V/C or Delay (s)	Significant Impact?	Future + Project + Mitigations		Project Increase In V/C or Delay (s)	Significant Impact?
						V/C or Delay (s)	LOS	V/C or Delay (s)	LOS			V/C or Delay (s)	LOS		
1	Figueroa St	I-405 SB On Ramp	Unsignalized	City of Carson/ Caltrans	AM	0.9	B	0.9	B	0.0	NO				
					PM	9.1	D	9.9	D	0.8	NO				
2	Figueroa St	I-405 NB Off Ramp	TWSC	City of Carson/ Caltrans	AM	171.8	F	195.4	F	23.6	[1]				
					PM	101.8	F	119.4	F	17.6	[1]				
					AM	0.738	[1]	0.749	[1]	0.011	NO				
					PM	0.933	[1]	0.949	[1]	0.016	NO				
3	S Main St	I-405 SB On Ramp	Signalized	City of Carson/ Caltrans	AM	0.457	A	0.486	A	0.029	NO	0.460	A	0.003	NO
					PM	0.917	E	0.955	E	0.038	YES	0.742	C	-0.175	NO
4	S Main St	I-405 NB Off Ramp	Signalized	City of Carson/ Caltrans	AM	0.563	A	0.594	A	0.031	NO				
					PM	0.683	B	0.721	C	0.038	NO				
5	S Vermont Ave	Del Amo Blvd	Signalized	City of Los Angeles	AM	0.712	C	0.797	C	0.085	YES	0.681	B	-0.031	NO
					PM	0.775	C	0.919	E	0.144	YES	0.758	C	-0.017	NO
				Los Angeles County	AM	0.768	C	0.847	D	0.079	YES	0.706	C	-0.062	NO
					PM	0.826	D	0.962	E	0.136	YES	0.795	C	-0.031	NO
6	Hamilton Ave	Del Amo Blvd	AWSC	City of Los Angeles	AM						[1]				
					PM						[1]				
7	Figueroa St	Del Amo Blvd	Signalized	City of Carson	AM	0.853	D	1.014	F	0.161	YES	0.892	D	0.039	NO
					PM	0.819	D	1.283	F	0.464	YES	1.003	F	0.184	YES
8	S Main St	E Del Amo Blvd	Signalized	City of Carson	AM	0.727	C	0.885	D	0.158	NO	0.808	D	0.081	NO
					PM	0.849	D	1.068	F	0.219	YES	0.887	D	0.038	NO
9	Stamps Dr	Del Amo Blvd	Project Intersection Signalized	City of Carson	AM	Project Intersection		0.580	A	Project Intersection					
					PM	Project Intersection		0.769	C	Project Intersection					
10	S Avalon Blvd	E Del Amo Blvd	Signalized	City of Carson	AM	0.874	D	0.957	E	0.083	YES	0.842	D	-0.032	NO
					PM	0.937	E	1.039	F	0.102	YES	0.933	E	-0.004	NO
11	Hamilton Ave	I-110 SB Ramps	AWSC	Los Angeles County/ Caltrans	AM						[1]				
					PM						[1]				
12	Figueroa St	I-110 NB Ramps	Signalized	Los Angeles County/ Caltrans	AM	0.874	D	1.054	F	0.180	YES	0.767	C	-0.107	NO
					PM	0.734	C	1.050	F	0.316	YES	0.760	C	0.026	NO
13	Main St	Lenardo Dr	Project Intersection Signalized	City of Carson	AM	Project Intersection		0.491	A	Project Intersection					
					PM	Project Intersection		0.581	A	Project Intersection					
14	Hamilton Ave	W Torrance Blvd	Signalized	Los Angeles County	AM	0.756	C	0.769	C	0.013	NO				
					PM	0.643	B	0.674	B	0.031	NO				
15	Figueroa St	W Torrance Blvd	Signalized	City of Carson	AM	0.820	D	0.877	D	0.057	NO	0.9	D	0.0	NO
					PM	0.809	D	0.901	E	0.092	YES	0.9	D	0.1	NO
16	S Main St	W Torrance Blvd	Signalized	City of Carson	AM	0.653	B	0.731	C	0.078	NO				
					PM	0.779	C	0.851	D	0.072	NO				
17	Lenardo Dr	I-405 SB Ramps	Project Intersection Signalized	City of Carson/ Caltrans	AM	Project Intersection		0.581	A	Project Intersection					
					PM	Project Intersection		0.515	A	Project Intersection					
18	S Avalon Blvd	I-405 SB Ramps	Signalized	City of Carson/ Caltrans	AM	0.663	B	0.712	C	0.049	NO				
					PM	0.612	B	0.715	C	0.103	NO				
19	S Avalon Blvd	I-405 NB Ramps	Signalized	City of Carson/ Caltrans	AM	0.527	A	0.596	A	0.069	NO				
					PM	0.619	B	0.817	D	0.198	NO				
20	S Main St	E 213th St	Signalized	City of Carson	AM	0.831	D	0.891	D	0.060	NO	0.696	B	-0.135	NO
					PM	0.834	D	0.930	E	0.096	YES	0.823	D	-0.011	NO
21	S Avalon Blvd	E 213th St	Signalized	City of Carson	AM	0.661	B	0.698	B	0.037	NO				
					PM	0.776	C	0.832	D	0.056	NO				
22	S Vermont Ave	W Carson St	Signalized	Los Angeles County	AM	0.918	E	0.942	E	0.024	YES	0.835	D	-0.083	NO
					PM	0.778	C	0.825	D	0.047	YES	0.757	C	-0.021	NO
23	Figueroa St	W Carson St	Signalized	City of Carson	AM	0.713	C	0.724	C	0.011	NO				
					PM	0.703	C	0.719	C	0.016	NO				
24	S Main St	W Carson St	Signalized	City of Carson	AM	0.481	A	0.571	A	0.090	NO				
					PM	0.623	B	0.703	C	0.080	NO				
25	S Avalon Blvd	E Carson St	Signalized	City of Carson	AM	0.872	D	0.920	E	0.048	YES	0.843	D	-0.029	NO
					PM	0.951	E	1.000	F	0.049	YES	0.958	E	0.007	NO
26	I-405 SB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.652	B	0.652	B	0.000	NO				
					PM	0.704	C	0.704	C	0.000	NO				
27	I-405 NB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.385	A	0.465	A	0.080	NO				
					PM	0.497	A	0.522	A	0.025	NO				

Notes
 TWSC Two-Way Stop Controlled
 AWSC All Way Stop Controlled
 [1] Methodology varies by Jurisdiction. If an intersection is located along a City border, both methodologies are applied.
 Signalized intersections within the City of Carson and Los Angeles County are analyzed with ICU methodology but have different impact thresholds based on jurisdiction
 Signalized intersections within the City of Los Angeles are analyzed with CMA methodology
 Un-signalized intersections within the City of Los Angeles and Los Angeles County are not included in the impact analysis; instead, signal warrant analyses are conducted
 Un-signalized intersections within the City of Carson are analyzed with HCM 2010, if the worst approach LOS is E or F, then impacts are determined based on ICU v/c
 [2] Existing analysis evaluates LOS under construction lane configurations, future analysis assumes post-construction lane configurations
 [3] Not all mitigations modeled are feasible. Mitigations at intersections under the jurisdiction of the City of Los Angeles, Los Angeles County, or Caltrans will require further coordination and detailed design review with the relevant jurisdiction to determine the feasibility of the mitigation. Any mitigation that is determined to be infeasible would be determined to be significant and unavoidable.

FUTURE PLUS PROJECT TRAFFIC LEVEL OF SERVICE

The resulting Future (year 2023) plus Project peak hour traffic volumes, provided in Appendix B, were analyzed to determine the projected future operating conditions with the addition of the proposed modified Project traffic and project intersections. The results of the Future (year 2023) plus Project analysis are also presented in Table 7, with analysis sheets provided in Appendix D. Fourteen of the 25 intersections analyzed are projected to operate at LOS D or better during the morning and afternoon peak hours under Future (year 2023) plus Project conditions.

The following 10 signalized intersections are projected to operate at poor levels of service, i.e., LOS E or F:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour)
5. Vermont Avenue & Del Amo Boulevard (AM & PM Peak Hour)
7. Figueroa Street & Del Amo Boulevard (AM & PM Peak Hours)
8. Main Street & Del Amo Boulevard (PM Peak Hour)
10. Avalon Boulevard & Del Amo Boulevard (AM & PM Peak Hours)
12. Figueroa Street & I-110 northbound ramps (AM & PM Peak Hours)
15. Figueroa Street & Torrance Boulevard (PM Peak Hour)
20. Main Street & 213th Street (PM Peak Hour)
22. Vermont Avenue & Carson Street (AM & PM Peak Hour)
25. Avalon Boulevard & Carson Street (AM & PM Peak Hours)

One unsignalized intersection is projected to operate at poor levels of service, i.e., LOS F: No. 2. Figueroa Street & I-405 northbound off-ramp (AM & PM Peak Hours).

Detailed LOS analysis sheets for the modified Project are provided in Appendix D.

FUTURE (YEAR 2023) PLUS PROJECT INTERSECTION IMPACTS

As shown in Table 7, using the criteria for determination of significant impacts, it is determined that the proposed modified Project would result in significant impacts at 10 intersections under Future (year 2023) plus Project conditions:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour)
5. Vermont Avenue & Del Amo Boulevard (AM and PM Peak Hours)
7. Figueroa Street & Del Amo Boulevard (AM and PM Peak Hours)
8. Main Street & Del Amo Boulevard (PM Peak Hour)
10. Avalon Boulevard & Del Amo Boulevard (AM and PM Peak Hours)
12. Figueroa Street & I-110 northbound ramps (AM and PM Peak Hours)
15. Figueroa Street & Torrance Boulevard (PM Peak Hour)
20. Main Street & 213th Street (PM Peak Hour)
22. Vermont Avenue & Carson Street (AM and PM Peak Hours)
25. Avalon Boulevard & Carson Street (AM and PM Peak Hours)



The V/C increase associated with the modified Project at each of the significantly impacted intersections is larger in the PM peak period compared to the AM peak period and there are four intersections with significant impacts during the PM peak period only.

Some of the significantly impacted intersections are located on the edge of the study area. Provided below is a brief discussion of these significant edge impacts and the manner in which modified Project traffic is expected to be assigned at the upstream and downstream intersections.

5. Vermont Avenue & Del Amo Boulevard

Vermont Avenue & Del Amo Boulevard is on the northwest edge of the study area. No significant impacts are expected west of the intersection as these trips are primarily drawing from the neighborhood and these trips are expected to disperse before reaching the nearest signalized intersection of Normandie Avenue & Torrance Boulevard. Since these intersections are located within Los Angeles County, impact analysis is not conducted on unsignalized intersections.

The next signalized intersection north of Vermont Avenue & Del Amo Boulevard is Vermont Avenue & Knox Street. The intersection of Vermont Avenue & Knox Street is a minor intersection and is expected to operate at LOS D or better. The modified Project is expected to add no more than 23 vehicles per hour per lane. Based on the expected operating conditions and with this level of additional added trips, the modified Project would result in an increase in V/C of less than the 0.02 significant impact threshold. As a result, no significant impacts are expected to occur at intersections north of the intersection of Vermont Avenue & Del Amo Boulevard.

10. Avalon Boulevard & Del Amo Boulevard

Avalon Boulevard & Del Amo Boulevard is at the northeastern edge of the study area. The modified Project is expected to add no more than 25 vehicles per hour per lane along the northbound and southbound through movements resulting in an increase in V/C of less than the 0.02 threshold for intersections within the City of Carson.

The next major intersection east of Avalon Boulevard & Del Amo Boulevard is Central Ave & Del Amo Boulevard. Based on recent traffic studies (e.g. Traffic Study for the Shell Carson Revitalization Project dated September 2012), Central Ave & Del Amo Boulevard is forecasted to operate at an LOS D in 2030 inclusive of the Shell Carson Revitalization Project as well as the Carson Marketplace Project. So it is assumed that the intersections would operate at LOS D or better under the Future year 2023 analysis conditions both with and without the modified Project. The City of Carson has no significant impact threshold at LOS D and as a result, no additional significant impacts east of Avalon Boulevard & Del Amo Boulevard are expected as part of this modified Project. Additional sensitivity testing confirmed that intersections east of Del Amo Boulevard are expected to operate at LOS D or better based on 2017 existing conditions and 2023 forecasts both with and without the modified Project.

22. Vermont Avenue & Carson Street

Vermont Avenue & Carson Street is located at the southwestern edge of the study area. The modified Project is expected to add no more than 15 vehicles per hour per lane to the southbound and northbound



through movements resulting in an increase in V/C of less than the 0.01 threshold for Los Angeles County intersections operating at LOS E or F. There are no significant impacts expected as a result of the modified Project to the south of Vermont Avenue & Carson Street. A sensitivity test was conducted for the intersection signalized intersection Berendo Avenue & Carson Street located west of the intersection of Vermont and Carson. The results of the sensitivity test indicate that the proposed modified Project traffic is not expected to create significant traffic impact west of the intersection of Vermont and Carson.

23. Figueroa Street & Carson Street

Figueroa Street & Carson Street is at the southern edge of the Project study area. The next signalized intersection south of the intersection of Figueroa Street & Carson Street is the signalized intersection of 220th Street/I-110 Ramps & Figueroa Street within the City of Carson. Based on the modified Project trip distribution, no more than 40 trips exit or enter the study area using Figueroa Street south of Carson Street. The intersection of 220th Street & Figueroa Street is a minor intersection and is expected to operate at LOS D or better. However even if the intersection were to operate at LOS E or F, the modified Project is expected to distribute traffic among the I-110 Ramps, 220th Street, and Figueroa Street resulting in an increasing V/C of less than the 0.02 threshold for City of Carson for intersections operating at LOS E or F.

25. Avalon Boulevard & Carson Street

Avalon Boulevard & Carson Street is at the southern edge of the Project area. The next intersection along Avalon Boulevard outside the study area is the signalized intersection of 220th Street & Avalon Blvd. The modified Project is adding no more than 15 vehicles per hour per lane along the northbound and southbound through movements. 220th Street is a minor neighborhood street and based the operating conditions of the study area, the intersection is expected to operate at LOS D or better. However, even if the intersection were to operate at LOS E or F the addition of trips fewer than 15 vehicles per hour per lane would result in an increase in V/C of less than the 0.02 threshold for City of Carson signalized study intersections operating at LOS E or F. As a result, no significant impacts are expected to occur at intersections south of the intersection of Avalon Boulevard & Carson Street.

APPROVED PROJECT INTERSECTION IMPACTS – 2017 AND 2023

To conduct a comparative analysis, the approved Project was analyzed using the 2017 state of the practice methodology and approach presented in this traffic study. This included an updated trip generation analysis for the approved Project and assignment of the approved Project trips to the existing 2017 and future year 2023 network. Results of the trip generation, level of service, and significant impact analyses are included in Appendix E.



As shown in the appendix, the approved Project, if analyzed under existing 2017 and future 2023 conditions (without mitigation), would have resulted in significant traffic impacts at the following eleven intersections:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour – 2017 and 2023)
5. Vermont Avenue & Del Amo Boulevard (AM and PM Peak Hours – 2017 and 2023)
7. Figueroa Street & Del Amo Boulevard (AM and PM Peak Hours – 2017 and 2023)
8. Main Street & Del Amo Boulevard (PM Peak Hour – 2017 and 2023)
10. Avalon Boulevard & Del Amo Boulevard (AM and PM Peak Hours – 2017 and 2023)
12. Figueroa Street & I-110 northbound ramps (AM and PM Peak Hours – 2017 and 2023)
15. Figueroa Street & Torrance Boulevard (PM Peak Hour – 2017 and 2023)
20. Main Street & 213th Street (PM Peak Hour – 2017 and 2023)
22. Vermont Avenue & Carson Street (AM and PM Peak Hours – 2017 and 2023)
23. Figueroa Street & Carson Street (AM and PM Peak Hours – 2017 only)
25. Avalon Boulevard & Carson Street (PM Peak Hour – 2017 and 2023; AM Peak Hour – 2023 only)

UNSIGNALIZED INTERSECTION SIGNAL WARRANT ANALYSIS

There are two unsignalized intersections that fall within the jurisdiction of either the City of Los Angeles or Los Angeles County. Traffic volumes and lane configurations, as presented in Appendix B, were used to prepare the California Manual on Uniform Traffic Control Devices (MUTCD) Peak Hour (Warrant 3) signal warrant analysis for the following two intersections:

6. Hamilton Avenue & Del Amo Boulevard (City of Los Angeles and Los Angeles County)
11. Hamilton Avenue & I-110 southbound ramps (Los Angeles County)

These two unsignalized intersections were analyzed under Existing, Existing plus Project, Future Base, and Future plus Project conditions. As shown in Table 8, the volumes at the Hamilton Avenue & Del Amo Boulevard intersection met the signal warrant thresholds during both peak hours under all analysis scenarios. The volumes at the Hamilton Avenue & I-110 south bound ramps intersection also met the signal warrant thresholds during both peak hours under all analysis scenarios. Signal analysis worksheets are included in Appendix F.

Should either LADOT and/or the County of Los Angeles prefer to install traffic signals at either of these locations, the modified Project would be responsible for a fair share contribution to the costs of the signal installation.

The approved Project transportation impact analysis did not conduct a signal warrant analyses on any of the unsignalized intersections. Intersections of Hamilton Avenue & Del Amo Boulevard and Hamilton Avenue & I-110 southbound ramps were analyzed as part of the significant impact analysis under the approved Project. Both intersections were determined to have significant impacts during both the AM and PM peak hours as a result of the approved Project.



**TABLE 8
THE DISTRICT AT SOUTH BAY PROJECT
PEAK HOUR SIGNAL WARRANT ANALYSIS**

No.	INTERSECTIONS	PEAK HOUR	EXISTING SIGNAL WARRANT MET	EXISTING PLUS PROJECT SIGNAL WARRANT MET	CUMULATIVE SIGNAL WARRANT MET	CUMULATIVE PLUS PROJECT SIGNAL WARRANT MET
6	Hamilton Avenue &	AM	Yes	Yes	Yes	Yes
	Del Amo Boulevard	PM	Yes	Yes	Yes	Yes
11	Hamilton Avenue &	AM	Yes	Yes	Yes	Yes
	I-110 southbound ramps	PM	Yes	Yes	Yes	Yes

5. INTERSECTION MITIGATION MEASURES

This section describes a set of mitigations for the modified Project and evaluates effectiveness of the program in mitigating the significant modified Project impacts described in the previous section. The mitigation program has been developed in discussions with the City, which has approved the approaches, analysis methods, and assumptions used to complete this analysis (Appendix A1).

The mitigation program includes a set of physical mitigations as well as a set of transportation demand management (TDM) strategies that would likely reduce the vehicle trip making associated with the proposed modified Project.

PHYSICAL MITIGATIONS

Table 6 and Table 7 show the reductions in V/C associated with the mitigation for the Existing and Future year analysis, respectively.

The mitigation program for the modified Project includes the following physical mitigations. All mitigation geometries are shown in Appendix B. The following discussion identifies each of the significantly impacted locations, the proposed physical improvements, and whether or not the improvement is feasible.

Intersection 3 – Main Street & I-405 Southbound On-Ramp

This intersection, located in the City of Carson at a Caltrans on-ramp, would be significantly impacted during the PM peak hour under the Existing year and Future year analysis. Conversion of the eastbound left-turn lane to a through/left-turn lane is proposed.

The improvement is feasible within the existing right-of-way and would require restriping the turn lane on the west leg of the intersection. The eastbound receiving lanes do not need to be restriped.

If determined to be feasible, the proposed lane conversion fully mitigates the impact under all scenarios. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

The proposed conceptual physical improvement has been reviewed by the City of Carson, however, Caltrans has jurisdiction over its ramp. Further coordination and detailed design review with Caltrans is needed to determine the feasibility of the improvement. If any component of the improvement were to be determined infeasible by Caltrans then the impact would remain significant and unavoidable.

To be conservative the City of Carson has rejected this mitigation due to the probability of Caltrans determining the physical mitigation to be infeasible. The City has determined the impact at Main Street & I-405 Southbound On-Ramp to be significant and unavoidable (Appendix A2).

Under the approved Project analysis, there were no significant impacts at this intersection and therefore no mitigation was analyzed. However, there was an increase in PM peak hour traffic by approximately 15% since the approved Project transportation impact analysis.



Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the PM peak hour under both Existing 2017 year and Future 2023 year analysis. The significant impact would be fully mitigated if the mitigation proposed as part of the modified Project were determined feasible, which as stated above, would not be given the jurisdictional issue.

Intersection 5 – Vermont Avenue & Del Amo Boulevard

This intersection is located within Los Angeles County on the border with the City of Los Angeles and would be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvement is proposed:

- Addition of a second westbound left-turn lane
- Conversion of the northbound through/right-turn lane to a second northbound through and a dedicated right-turn lane. This would require the removal of approximately eight parking spaces.

The improvements are feasible within the existing right-of-way and would require restriping westbound approach to add a second left-turn lane, restriping the east and west legs of the intersection to align the through lanes, restriping the northbound approach to add the right-turn lane, and extending the red curb along the northbound approach to accommodate the northbound right-turn lane.

This intersection was analyzed using both the CMA and ICU approach. If determined to be feasible, the improvements would fully mitigate the impact under all scenarios and analysis methods. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

The proposed conceptual physical mitigation has been reviewed by the City of Carson, but the intersection is on the border of the City of Los Angeles (north side of the intersection) and Los Angeles County (south side of the intersection). As a result, further coordination and detailed design review with the City of Los Angeles and Los Angeles County is needed to determine the feasibility of the mitigation. If any component of the mitigation were to be determined infeasible by the City of Los Angeles or Los Angeles County, then the impact would remain significant and unavoidable.

To be conservative the City of Carson has rejected this mitigation due to the probability of Los Angeles County and or City of Los Angeles determining the physical mitigation to be infeasible. The City has determined the impact at Vermont Avenue & Del Amo Boulevard to be significant and unavoidable (Appendix A2).

Under the approved Project transportation impact analysis, this intersection was only significantly impacted during the PM peak hour. An additional westbound left-turn lane was proposed as mitigation as part of the approved Project. The mitigation proposed for the modified Project is required due to the Los Angeles County significant impact criteria that is more restrictive compared to City of Carson significant impact criteria, which was used in the approved Project.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the AM and PM peak hours under both Existing 2017 year and Future 2023 year analysis. The impact would be fully mitigated if the mitigation proposed as part of the modified Project were determined feasible, which as stated above would not be given the jurisdictional issues.



Intersection 7 – Figueroa Street & Del Amo Boulevard

This intersection, located within the City of Carson, would be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvement is proposed:

- Addition of a second westbound left-turn lane
- Conversion of the westbound right-turn lane to a through/right lane
- Addition of a second southbound left-turn lane
- Conversion of the southbound through and southbound right lane to a through/right lane
- Conversion of the eastbound right-turn lane to a through/right lane
- Addition of a northbound right-turn only lane

The improvements are substantial and would require removing all median islands, restriping and realigning the intersection, and narrowing lanes widths to a minimum of 10 feet. However, the proposed improvements do not fully mitigate the impact to less than significant levels (see Table 6 and Table 7). Further, the City of Carson has reviewed this potential improvement and determined it to be in conflict with the Carson General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic purposes and to improve the quality of transportation corridors). The proposed mitigation is also in conflict with the Carson Master Plan of Bikeways (2013) which proposes buffered bike lanes along Figueroa Street north of Del Amo Boulevard, colored bike lanes along Figueroa Street south of Del Amo Boulevard, and buffered bike lanes along Del Amo Boulevard.

Both Figueroa Street and Del Amo Boulevard are also identified as Truck Routes within the City of Carson and the proposed mitigation reduces lane widths below the City standards set forth in the Carson Master Plan of Bikeways (12 foot minimums along Del Amo Boulevard and 11' foot minimums along Figueroa Street).

Due to inconsistencies with existing City plans and policies, the City of Carson has rejected the mitigation and the impact at the intersection would remain significant and unavoidable (Appendix A2).

Under the approved Project transportation impact analysis, this intersection was significantly impacted during both the AM and PM peak hours. An additional westbound left-turn lane, southbound right-turn lane, eastbound through lane, and eastbound right-turn lane were proposed to fully mitigate the significant impacts. Since the approved Project transportation study, background traffic has significantly increased along the northbound right-turn, eastbound through, and southbound left-turn movements during both the AM and PM peak hours; as a result, the mitigations previously proposed are no longer able to mitigate the modified Project-related impact to lower than significant levels.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the AM and PM peak hours under both Existing 2017 year and Future 2023 year analysis. The mitigation proposed here would not fully mitigate the significant impact associated with the approved Project under 2017 or 2023 conditions and the impact would remain significant and unavoidable for the approved Project during the 2017 and 2023 PM peak hours even if the mitigation were determined feasible, which, as stated above, would not be given the inconsistencies with the City plans and policies.



Intersection 8 – Main Street & Del Amo Boulevard

This intersection, located within the City of Carson, would be significantly impacted during the PM peak hour under the Existing year and Future year analysis. The following improvement is proposed:

- Addition of a second westbound left-turn lane
- Addition of a second southbound dedicated through lane
- Conversion of the eastbound through/right lane to a through lane and a right-turn lane
- Conversion of the northbound through/right lane to a through lane and a right-turn lane

These improvements would require acquisition of right-of-way from the undeveloped parcel on the northeast corner (currently under consideration for a residential project) to accommodate the additional westbound left-turn lane. The improvements would also require removal of the existing median islands, narrowing lanes to a minimum of 10 feet, and realigning the intersection to accommodate the proposed lane configurations. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

The City of Carson has reviewed this potential improvement and determined it to be in conflict with the Carson General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic purposes and to improve the quality of transportation corridors). The proposed mitigation is also inconsistent with the Carson Master Plan of Bikeways (2013) which proposes buffered bike lanes along both Del Amo Boulevard and Main Street.

Both Main Street and Del Amo Boulevard are also identified as Truck Routes within the City of Carson and the proposed mitigation reduces lane widths below the City standards set forth in the Carson Master Plan of Bikeways (12 foot minimums along Del Amo Boulevard and 11 foot minimums along Figueroa Street).

Due to inconsistencies with existing City plans and policies, the City of Carson has rejected the mitigation and the impact at the intersection would remain significant and unavoidable (Appendix A2).

Under the approved Project transportation impact analysis, this intersection was significantly impacted during the PM peak hour. An additional westbound left-turn lane, southbound left-turn lane, southbound right-turn lane, eastbound left-turn lane, northbound left-turn lane, and northbound right-turn lane were proposed to fully mitigate the significant impact. Since the approved Project, background traffic has significantly increased in the southbound through and eastbound through movements. Therefore the mitigations previously proposed are no longer able to fully mitigate the modified Project-related impact to lower than significant levels.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the AM and PM peak hours under both Existing 2017 year and Future 2023 year analysis. The mitigation proposed here would not fully mitigate the impact associated with the approved Project under 2017 or 2023 conditions and the impact would remain significant and unavoidable for the approved Project during the 2017 and 2023 PM peak period even if the mitigation were determined to be feasible, which, as set forth above, would not be given inconsistencies City plans and policies.



Intersection 10 – Avalon Boulevard & Del Amo Boulevard

This intersection, located within the City of Carson, would be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvement is proposed:

- Conversion of the southbound through/right-lane to a through lane and a right-turn lane
- Addition of a second northbound left-turn lane

The improvements are conceptually feasible within the existing right-of-way but would require removing and reconstructing all median islands, restriping a bike lane to provide a southbound right-turn lane, and realigning the intersection approaches. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

The City of Carson has reviewed this potential improvement and determined it to be in conflict with the Carson General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic purposes and to improve the quality of transportation corridors).

Due to inconsistencies with existing City plans and policies, the City of Carson has rejected the mitigation and the impact would remain significant and unavoidable (Appendix A2).

Under the approved Project transportation impact analysis, there were no significant traffic impacts identified at this intersection and therefore, no mitigation was proposed. However, there has been an increase in overall traffic at this intersection by approximately 20% since the approved Project analysis.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the AM and PM peak hours under both Existing year and Future year analysis. If determined feasible, the mitigation proposed as part of the modified Project would fully mitigate the significant impact associated with the approved Project, which as set forth above would not be given conflicts with City plans and policies.

Intersection 12 – Figueroa Street & I-110 Northbound Ramps

This intersection, located within the City of Carson at Caltrans on/off-ramps, is determined to be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvement is proposed:

- Addition of a southbound through/right lane
- Addition of a third southbound receiving lane
- Conversion of the eastbound left/right lane to a dedicated left-turn lane and a dedicated right-turn lane

The improvements along the southbound approach would require a combination of partial widening on the west side of the north leg of the intersection along with modifying the median islands and restriping and realigning the lanes on both the north and south legs. An additional southbound receiving lane would also need to be added south of the intersection. The improvements along the eastbound approach would require reconfiguring and widening the Caltrans off-ramp.



If determined to be feasible, the proposed improvements fully mitigate the impact under all scenarios. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

The City of Carson has reviewed this potential improvement and determined it to be in conflict with the Carson Master Plan of Bikeways (2013) which proposes bike lanes along Figueroa Street. Furthermore, to be conservative, the City of Carson determined the addition of an eastbound lane within Caltrans right-of-way to be potentially infeasible due to the probability of Caltrans determining the physical improvement to be infeasible.

Due to inconsistencies with existing City plans and policies, the City of Carson has rejected the physical mitigation and the impact would remain significant and unavoidable (Appendix A2).

Under the approved Project transportation impact analysis, this intersection was significantly impacted during both analyzed peak hours. An additional southbound right-turn lane, eastbound right-turn lane, and removal of an eastbound shared left-/right-turn lane were proposed to mitigate the impacts. The proposed mitigations as part of the approved Project were able to mitigate the significant impact during the AM peak hour but the significant impact during the PM peak hour remained significant and unavoidable.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the AM and PM peak hours under both Existing 2017 year and Future 2023 year analysis. The mitigation proposed for the modified Project would not fully mitigate the impact associated with the approved Project under 2017 or 2023 conditions and the impact would remain significant and unavoidable for the approved Project during the 2017 and 2023 PM peak period even if the mitigation were determined to be feasible, which as set forth above would not be given conflicts with City plans and policies.

Intersection 15 – Figueroa Street & Torrance Boulevard

This intersection, located within the City of Carson, would be significantly impacted during the Future year PM peak hour only. Conversion of the northbound through/right lane to a through lane and a right-turn lane is proposed.

The improvement is feasible within the existing right-of-way but would require restriping and the removal of approximately eight parking spaces. The proposed conceptual improvement has been reviewed by the City of Carson traffic engineer and the City has determined that the removal of parking to provide the right-turn lane would not result in an adverse effect. The City has determined the proposed improvement to be an acceptable mitigation for significant traffic impact at the intersection under all scenarios. Table 7 shows the reduction in V/C associated with the mitigation.

Under the approved Project transportation impact analysis, this intersection was significantly impacted during the PM peak hour. An additional southbound left-turn lane was proposed to fully mitigate the significant impact. Since the approved Project analysis, there has been a decrease in traffic making the southbound left-turn movement. The mitigation proposed by the approved Project would have required reconfiguring or removing the median island.

Analyzing the approved Project using the current 2017 state-of-practice identified a significant impact during the PM peak hour under both Existing year and Future year analysis. The mitigation proposed as



part of the modified Project would fully mitigate the impact associated with the approved Project under 2017 or 2023 conditions.

Intersection 20 – Main Street & 213th Street

This intersection, located within the City of Carson, would be significantly impacted during the Existing year and Future year PM peak hour only. Conversion of the westbound left/right lane to a left-turn lane and a right-turn lane is proposed.

The improvement is feasible within the existing right-of-way but would require restriping and the removal of approximately eight on-street parking spaces. The proposed conceptual improvement has been reviewed by the City of Carson traffic engineer and the City has determined that the removal of parking to provide the right-turn lane would not result in an adverse effect. The City has determined the proposed improvement to be an acceptable mitigation for the significant traffic impact at the intersection under all scenarios. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

Under the approved Project transportation impact analysis, no significant impact was identified at this intersection.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the PM peak hour under both Existing 2017 year and Future 2023 year analysis. The mitigation proposed as part of the modified Project would fully mitigate the impact associated with the approved Project under 2017 or 2023 conditions.

Intersection 22 – Vermont Avenue & Carson Street

This intersection is located within Los Angeles County and would be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvements are proposed:

- Conversion of the westbound right-turn lane to a through/right lane
- Conversion of the eastbound right-turn lane to a through/right lane

The improvement is feasible within the existing right-of-way but would require restriping and the addition of a receiving lane in the westbound direction. Parking would need to be removed along Carson Street to provide a third through lane in the eastbound and westbound directions to create a consistent configuration along the corridor. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

The proposed improvements fully mitigate the impact under all scenarios. However, the proposed conversion of a westbound right-turn lane to a through/right-turn lane would require the elimination of on-street parking on the north side of Carson Street west of Vermont Avenue. Los Angeles County has indicated that removal of on-street parking is not acceptable because of the impacts to commercial uses at this location. Within the City of Carson, Carson Street is currently being redesigned per the Carson Street



Mixed-Use District Master Plan to provide two lanes in each direction with curb extensions, sharrow⁹ pavement markings and a center median island.

The City of Carson has reviewed this potential improvement and determined it to be in conflict with the General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic purposed and to improve the quality of transportation corridors) as well as the Carson Street Mixed-Use District Master Plan, which is currently being implemented along Carson Street.

The City of Carson, with consultation from Los Angeles County, has rejected the mitigation and the impact at this intersection would remain significant and unavoidable.

Under the approved Project transportation impact analysis, this intersection was significantly impacted during both peak hours. The same mitigations were proposed under the approved Project and the modified Project.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the PM peak hour under both Existing 2017 year and Future 2023 year analysis. If determined feasible, the mitigation proposed as part of the modified Project would fully mitigate the significant impact associated with the approved Project under 2017 and 2023 conditions, however, the City has determined that this measure is inconsistent with its General Plan as stated above.

Intersection 23 – Figueroa Street & Carson Street

This intersection, located within the City of Carson, would be significantly impacted during the AM and PM peak periods during existing conditions due to ongoing current construction conditions/activities only. The current construction is anticipated to be completed later this year (2017) which will be before the Project construction commences for the proposed modified Project. This is a temporary impact due to ongoing construction by the City and once completed, the existing intersection geometry will be returned which fully accommodates Future year traffic/proposed modified Project buildout.

Intersection 25 – Avalon Boulevard & Carson Street

This intersection, located within the City of Carson, would be significantly impacted during the existing year analysis in the PM peak hour and during the Future year analysis in both the AM and PM peak hour. The following improvements are proposed:

- Convert the southbound through/right lane to a dedicated right-turn lane
- Convert the northbound through/right lane to a dedicated right-turn lane

⁹ Shared Lane Markings (SLMs), or “sharrows,” are road markings used to indicate a shared lane environment for bicycles and automobiles. Among other benefits shared lane markings reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and may be configured to offer directional and wayfinding guidance. National Association of City Transportation Officials (NACTO) – Urban Bikeway Design Guide.



The improvement is feasible within the existing right-of-way and would require restriping the northbound and southbound right-turn lanes and restriping the three receiving lanes to provide only two receiving lanes. These proposed improvements fully mitigate the significant impact at this intersection under all scenarios. Table 6 and Table 7 show the reductions in V/C associated with the mitigation.

The City of Carson has reviewed the potential improvements and has determined it to be consistent with existing plans and policies. The City has determined the proposed improvements to be an acceptable mitigation of the significant traffic impact at this intersection under all scenarios.

Under the approved Project transportation impact analysis, this intersection was significantly impacted during the PM peak hour. An additional westbound right-turn lane, southbound right-turn lane, eastbound right-turn lane, and northbound right-turn lane were proposed to mitigate the significant impact. However, the impacts were not fully mitigated. The proposed mitigations under the approved Project are no longer feasible as the improvements would require addition right-to-way to implement under current conditions.

Analyzing the approved Project using the current 2017 state-of-practice methodologies identified a significant impact during the PM peak hour under the Existing year analysis and during the AM and PM peak hour during the Future year analysis. The mitigation proposed as part of the modified Project would mitigate the impact during the AM peak hour only but the impact would remain significant and unavoidable during the 2017 and 2023 PM peak hour.

SIGNIFICANT AND UNAVOIDABLE IMPACTS

To be conservative, this transportation impact study assumes significant and unavoidable impacts at all significantly impacted intersections where the proposed mitigations either do not fully mitigate, have been determined to be infeasible by the City of Carson (would require removing a median island and as such contrary to established City policies), or have a probability of being determined infeasible by a private entity or a public agency (other than City of Carson) having jurisdiction over components of the intersection. Provided below is a list of study intersections where modified Project related transportation impacts will remain significant and unavoidable after the aforementioned mitigations:

3. Main Street & I-405 SB On-Ramp (Caltrans Jurisdiction)
5. Vermont Avenue & Del Amo Boulevard (Los Angeles County/City of Los Angeles Jurisdiction)
7. Hamilton Avenue & Del Amo Boulevard (Physical mitigation does not fully mitigate and in conflict with City of Carson policies)
8. Main Street & Del Amo Boulevard (Physical mitigation in conflict with City of Carson policies)
10. Avalon Boulevard & Del Amo Boulevard (Physical mitigation in conflict with City of Carson policies)
12. Figueroa Street & I-110 NB Ramps (Los Angeles County & Caltrans)
22. Vermont Avenue & Carson Street (Los Angeles County)



TRANSPORTATION DEMAND MANAGEMENT

A TDM program could further reduce the number and degree of impacts associated with the modified Project and could be developed for the modified Project in consultation with the City. The modified Project trip generation has already accounted for the trip reduction associated with the outlet center charter buses. However, to be conservative, this transportation impact study did not take any additional trip generation reduction for any of the potential TDM strategies listed below.

Several Project design features could enhance the usage of walking, biking, and transit modes as alternatives to the automobile, including:

- Wider sidewalks
- Street trees along the perimeter
- Improved street and pedestrian lighting

Additional TDM program elements could include the following:

- Unbundled Parking – Unbundling parking typically separates the cost of purchasing or renting parking spaces from the cost of the purchasing or renting a dwelling unit. Saving money on a dwelling unit by forgoing a parking space acts as an incentive that minimizes auto ownership. Similarly, paying for parking (by purchasing or leasing a space) acts as a disincentive that discourages auto ownership and trip-making.
- Rideshare Programs – Rideshare programs typically include the provision of an on-site transit and rideshare information center that provides assistance to help people form carpools or access transit alternatives. Rideshare programs often also include priority parking for carpools. Rideshare programs are more commonly provided for Project site employees but residents could also benefit from a similar program.
- Transit Pass Discount Program – Transit pass discount programs are typically negotiated with transit service providers to purchase transit passes in bulk, and therefore at a discounted rate. Discounted passes are then sold to interested residents or employees, helping them to obtain price discounts through the economies of scale of bulk purchasing. Transit pass discount programs are generally provided to Project site employees but could also be sold to Project site residents.
- Bicycle Parking and Bike Share Program – The modified Project is already providing bicycle facilities within the Project site as well as short-term bicycle parking. The modified Project could provide additional complementary amenities such as long-term bicycle parking, self-service bike repair area, and potentially a bike share service among residents, employees and visitors of the site.
- Car Share Program – The modified Project could allow space for a car share service within its proposed parking facilities. A car share program is a model of car rental where people rent cars for short periods of time, often by the hour. The programs are attractive to customers who make only occasional use of a vehicle, as well as others who would like occasional access to a vehicle of a different type than they use day-to-day.



- Upgrade to Transit Amenities – The modified Project, in conjunction with Los Angeles Metropolitan Transportation Authority or the Carson Circuit, could identify potential bus routes that may be modified to provide direct service to the Project site. Additionally, the modified Project could identify nearby bus-stops to upgrade stop locations to further encourage the use of transit in the area.

The trip reduction benefits associated with each of these strategies varies based on several factors including the type of project land uses, the types of adjacent land uses, the density of development in the area, and the combination of strategies applied. To be conservative, the specific trip reduction associated with these strategies was not included in the LOS analysis of the physical mitigations. Instead, the TDM strategies that apply to commercial uses will be required of Project site employers/tenants with over 75 employees as a means to further reduce the trips associated with the modified Project.



6. REGIONAL TRANSPORTATION SYSTEM ANALYSIS

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

The regional setting of the Project site within the freeway network and the regional nature of some of the modified Project land uses necessitated a detailed analysis of freeway segment and off-ramp queuing, both in consultation with Caltrans. The regional freeway analysis was conducted separately from the CMP freeway monitoring station analysis.

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 CMP TRAFFIC IMPACT CRITERIA

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

- The proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C 0.02), causing LOS F (V/C > 1.00)
- If the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity (V/C 0.02)

ARTERIAL CMP MONITORING STATION ANALYSIS

None of the study area intersections are CMP arterial monitoring locations. The CMP arterial monitoring stations nearest to the modified Project study area are:

- Western Avenue & 190th Street (City of Torrance)
- Western Avenue & Carson Street (City of Torrance)
- Western Avenue at Sepulveda Boulevard (City of Torrance)



The CMP arterial monitoring station closest to the proposed Project site is at Western Avenue & Carson Street located two miles west of the proposed Project site. Western Avenue & 190th Street is located approximately two miles northwest of the proposed Project site and Western Avenue & Sepulveda Boulevard is located approximately 2.5 miles southwest of the proposed Project site. Based on the Project trip distribution and trip generation, the modified Project is not expected to add 50 peak hour vehicle trips through the closest CMP arterial monitoring station. The majority of neighborhood commercial modified Project trips are anticipated to disperse among the transportation network within close proximity to the study area and less than 2% of total modified Project trips (or a maximum of 46 trips) are expected at any of the CMP monitoring stations.

REGIONAL TRANSIT IMPACT ANALYSIS

Potential transit related person-trips generated by the proposed modified Project were estimated. Appendix D.8.4 of the 2010 CMP provides a methodology for estimating the number of transit trips expected to result from a proposed modified 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 the modified 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 D.8.4 of the 2010 CMP recommends summarizing the fixed-route local bus services within ¼ mile of the Project site and express bus routes and rail service within two miles of the Project site.

The modified Project is located adjacent to the Carson Circuit North-South Shuttle at the Del Amo/Main stop, 1-mile from the Metro Silver Line at the Carson Station, and ½-mile from the Torrance Transit Rapid 3 Line at Avalon and Carson. However, the modified Project is not located within ¼ mile of a designated CMP transit center, multi-modal transportation center, or transit corridor. Therefore, the CMP guidelines provide that approximately 3.5% of total person trips generated are assumed to use transit to travel to and from the site. Without applying the transit trip/walk/bike credit in the trip generation table shown in Table 4 (which assumes 1% of trips use transit to access the site), the proposed modified Project would have an estimated increase in vehicle trip generation of approximately 2,807 net vehicle trips during the AM peak hour and 4,353 during the PM peak hour. Applying the AVR factor of 1.4 to the estimated vehicle trips (excluding the 1% transit/walk/bike credit) would result in an estimated increase of approximately 3,930 and 6,094 person trips during the AM and PM peak hours, respectively. Applying the 3.5% transit use would result in approximately 138 new transit person trips during the weekday AM peak hour and 213 new transit person trips during the weekday PM peak hour.

Within the two miles of the Project site, Metro operates the Silver Line (950) with 5-minute headways during peak hours and Torrance Transit operates the Rapid 3 with 30-minute headways during the peak hour. Within a ¼ mile of the Project site, the Carson Circuit North-South shuttle operates with 50-minute headways during the peak periods. The total of these bus services has an estimated seating capacity of 1,900 persons per hour during the peak periods based on a seating capacity of 40 persons for a shuttle and 65 persons for a Rapid articulated bus. The proposed modified Project would utilize up to 11% of available transit capacity during the peak hours using the CMP assumption of transit trips equating to 3.5% of person trips. At this level of transit capacity utilization, the modified Project is anticipated to result in a significant CMP transit impact.



At this level of absorption of transit system capacity, it is concluded that Project-related impacts to the regional transit system could be significant. Mitigation of this impact could require some combination of the following (in consultation with Los Angeles Metropolitan Transportation Authority, the Carson Circuit, or other transit providers):

- Extension of existing public bus routes into the Project site will increase transit capacity by adding service to the area
- Provision of additional buses along key routes serving the Project site will increase transit frequency and capacity
- Provision of transit stops, potentially including benches and shelters, in and adjacent to the Project site will improve the quality and increase the network density of transit service.

FREEWAY CMP IMPACT ANALYSIS

Regional access to the Project site is provided by the I-110 Freeway located approximately 0.5 miles west of the Project site and the I-405 Freeway immediately east of the Project site. The CMP freeway monitoring stations closest to the Project site is immediately adjacent to the Project site along the I-405 Freeway south of I-110 and north of Del Amo Boulevard.

Based on the modified Project's trip distribution and trip assignment, greater than 150 trips will be added to the monitoring site during the AM and PM peak hours. As a result, a CMP freeway impact analysis was conducted. Table 9 shows the Existing, Existing plus Project, Future Base, and Future plus Project operating conditions at the CMP freeway monitoring station closest to the modified Project (CMP Station 1067). Table 9 shows that the modified Project would result in significant impacts during the Existing year analysis in the southbound direction during the PM peak hour only. During the Future year analysis, the modified Project would result in significant impacts in both the southbound and northbound directions during the PM peak hour.

Implementation of additional freeway capacity to address significant impacts is beyond the ability of any individual project to implement and outside the jurisdiction of the City of Carson, and, as such, the modified Project's incremental freeway impacts at the CMP monitoring location would be considered significant and unavoidable.



**TABLE 9
THE DISTRICT AT SOUTH BAY PROJECT
CMP FREEWAY ANALYSIS**

							Base Demand 2009			Existing Without Project 2017			Existing With Project 2017					Future Without Project 2023			Future With Project 2023				
CMP Station	Freeway Route	Post Mile			Project Trips	Capacity	Demand	D/C	LOS	Demand	D/C	LOS	Demand	D/C	LOS	Change in		Demand	D/C	LOS	Demand	D/C	LOS	Change in	
			D/C	Impact												D/C	Impact								
1067	I-405	11.9	NB	AM	117	10,000	10,900	1.090	F(0)	11,282	1.128	F(0)	11,399	1.140	F(0)	0.012	NO	11,521	1.152	F(0)	11,638	1.164	F(0)	0.012	NO
	s/o Rte 110		NB	PM	235	10,000	9,400	0.940	E	9,729	0.973	E	9,964	0.996	E	0.023	NO	9,936	0.994	E	10,171	1.017	F(0)	0.023	YES
			SB	AM	168	10,000	9,400	0.940	E	9,729	0.973	E	9,897	0.990	E	0.017	NO	9,936	0.994	E	10,104	1.010	F(0)	0.016	NO
			SB	PM	257	10,000	11,300	1.130	F(0)	11,696	1.170	F(0)	11,953	1.195	F(0)	0.025	YES	11,944	1.194	F(0)	12,201	1.220	F(0)	0.026	YES

Source: 2010 Congestion Management Program for Los Angeles County (Metropolitan Transportation Authority, September 2010), Appendix D, Exhibit D-1.

FREEWAY IMPACT ANALYSIS

This section presents an analysis of potential Project impacts on the freeway system in the study area. A detailed level of service (LOS) analysis was conducted for 23 freeway segments in both directions of travel along the SR-91, I-110, I-405, and I-710 freeways during the weekday morning and evening peak hours. A queuing analysis was also conducted for the eight off-ramp locations along the I-405 and I-110 freeways.

The 2010 *Highway Capacity Manual* (HCM 2000) (Transportation Research Board, 2010) freeway segment methodology was used to analyze the capacity and LOS of basic freeway segments. A basic freeway segment can be characterized by three performance measures: density in terms of passenger cars per mile per lane, speed in terms of mean passenger-car speed, and V/C ratio. Each of these measures is an indication of how well the freeway is accommodating traffic flow. The measure used to provide an estimate of LOS is density. The following identifies the LOS definitions for the freeway mainline analysis:

LOS Criteria for Freeway Segments [1]

LOS	Density Range (pc/mi/ln)
A	0-11
B	>11-18
C	>18-26
D	>26-35
E	>35-45
F	>45

Sources:

1. Highway Capacity Manual 2010, Exhibit 11-5

CALTRANS CRITERIA

Per the *Guide for the Preparation of Traffic Impact Studies* (State of California Department of Transportation [Caltrans], December 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 and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating above the appropriate target LOS, the existing measure of effectiveness (MOE) should be maintained.



Based on these guidelines, a project-related impact is considered significant when the baseline LOS is C and becomes D with the addition of the modified Project, the baseline LOS is D and becomes E with addition of the modified Project, or the baseline LOS is E and becomes F with addition of the modified Project.

It should be noted the aforementioned criteria does not allow for determination of significant impact if the segment is operating at LOS F under baseline conditions. To determine significant impact for such segments, the CMP significant impact criteria were used to develop the following significance thresholds: if the facility is already at LOS F, a significant impact occurs when the proposed modified Project increases traffic demand on a CMP facility by 2%.

FREEWAY MAINLINE LEVELS OF SERVICE

Baseline freeway volumes were obtained from the Caltrans Traffic Count Database (2015). Directional peak hour volumes were calculated using Caltrans Peak Hour Volume Data guidelines. Freeway mainline volumes for Year 2017 were calculated by applying a growth factor of 0.5% to the baseline freeway segment volumes. The growth factor was informed by historic growth trends, the CMP growth factor, and in consultation with the City of Carson. Traffic generated by the modified Project was added to freeway mainlines for the Year 2017 plus Project analysis.

Table 10A and 10B presents the results of the existing freeway mainline segments LOS using density as the MOE. As shown in the tables, 18 of the 23 analyzed segments currently operate at LOS E or F in at least one direction during at least one peak period (AM or PM).

Freeway mainline volumes for Year 2023 were calculated similar to the method used to project Year 2017 traffic volumes using the same growth factor. Traffic generated by the modified Project was added to the freeway mainlines for the Future Year 2023 plus Project analysis.

Table 10A and 10B presents the results of Year 2023 freeway mainline segment analysis with and without the modified Project volumes. As shown in the tables, 19 of the 23 analyzed freeway segments are projected to operate at a LOS E or worse under Future Year 2023 conditions. Based on the Caltrans criteria presented above, the following locations are projected to have a significant impacts:

- I-110
 - Southbound between Sepulveda Boulevard & Carson Street (Existing plus Project, PM only)
 - Northbound between Carson Street & Torrance Boulevard (Existing plus Project, PM only)
 - Southbound between Carson Street & Torrance Boulevard (Existing plus Project, PM only)
 - Northbound between Torrance Boulevard & I-405 Interchange (AM and PM)
 - Southbound between Torrance Boulevard & I-405 Interchange (PM only)
 - Northbound between I-405 Interchange & SR-91 Interchange (AM only)
 - Southbound between I-405 Interchange & SR-91 Interchange (AM and PM)
 - Southbound between SR-91 Interchange & Redondo Beach Boulevard (Future plus Project, PM only)



- I-405
 - Southbound between Alameda Street & Wilmington Avenue (Existing plus Project, PM only)
 - Southbound between Wilmington Avenue & Carson Street (PM only)
 - Northbound between Carson Street & Avalon Boulevard (AM only)
 - Southbound between Carson Street & Avalon Boulevard (PM only)
 - Northbound between Avalon Boulevard & I-110 Interchange (Existing plus Project, AM only)
 - Southbound between I-110 Interchange & Vermont Avenue (Existing plus Project AM and PM, Future plus Project PM only)
 - Southbound between Vermont Avenue & Normandie Avenue (PM only)

- I-710
 - Southbound between I-405 Interchange & Del Amo Boulevard (Future plus Project AM only)

Implementation of additional freeway capacity to address significant cumulative conditions is beyond the ability of any individual project to implement and, as such, the modified Project's incremental impacts on poor cumulative conditions on identified segments would be considered significant and unavoidable.

FREEWAY OFF-RAMP QUEUING ANALYSIS

A queuing analysis was conducted for key freeway off-ramps to identify whether vehicles exiting the freeway may create queues backing onto the freeway mainline. The queuing analysis for the off-ramp locations was conducted using Synchro software and the 2010 *Highway Capacity Manual* (HCM 2010) (Transportation Research Board, 2010) methodology. The analysis used 95th percentile queue calculations for the purpose of this analysis.

Table 11 presents the results of the queuing analysis under the following scenarios:

- Existing Year 2017 without Project
- Existing Year 2017 with Project
- Future Year 2023 without Project
- Future Year 2023 with Project

As shown in the table, the estimated 95th percentile queue is not projected to exceed the available queue storage capacity at any of the analyzed freeway off-ramps under any of the aforementioned analyzed scenarios. Analysis sheets are provided in Appendix G.



TABLE 10A
THE DISTRICT AT SOUTH BAY
FREEWAY SEGMENT IMPACT ANALYSIS - AM PEAK HOUR

Fwy Name	From	To	Dir	Period	Existing (Year 2017)			Existing with Project			Percent Increase	Change in MOE?	Future (Year 2023)			Future with Project			Percent Increase	Change in MOE?
					Volume	LOS	Density	Volume	LOS	Density			Volume	LOS	Density	Volume	LOS	Density		
SR-91	I-110	Avalon	WB	AM	8,490	D	31.5	8,524	D	31.6	0.4%	No	8,742	D	32.7	8,776	D	32.9	0.4%	No
			EB	AM	5,186	B	14.5	5,277	B	14.8	1.8%	No	5,340	B	14.9	5,431	B	15.2	1.7%	No
	Avalon	Central	WB	AM	8,660	D	30.7	8,755	D	31.1	1.1%	No	8,917	D	32.0	9,012	D	32.5	1.1%	No
			EB	AM	5,290	B	17.8	5,381	C	18.1	1.7%	No	5,447	C	18.3	5,538	C	18.6	1.7%	No
	Central	Wilmington	WB	AM	8,830	D	31.5	8,925	D	32.0	1.1%	No	9,092	D	33.0	9,187	D	33.5	1.0%	No
			EB	AM	5,393	C	18.1	5,484	C	18.4	1.7%	No	5,553	C	18.6	5,644	C	18.9	1.6%	No
I-110	SR-1	Sepulveda	NB	AM	7,256	D	32.8	7,298	D	33.1	0.6%	No	7,470	D	34.4	7,512	D	34.7	0.6%	No
			SB	AM	5,300	C	22.2	5,341	C	22.4	0.8%	No	5,456	C	22.9	5,497	C	23.1	0.8%	No
	Sepulveda	Carson	NB	AM	7,807	E	35.5	7,871	E	36.0	0.8%	No	8,037	E	37.4	8,101	E	37.9	0.8%	No
			SB	AM	5,747	C	24.3	5,814	C	24.6	1.2%	No	5,916	C	25.1	5,983	C	25.4	1.1%	No
	Carson	Torrance	NB	AM	8,985	F	47.2	9,061	F	48.2	0.8%	No	9,250	F	50.7	9,326	F	51.8	0.8%	No
			SB	AM	6,614	D	27.4	6,686	D	27.8	1.1%	No	6,809	D	28.6	6,881	D	29.0	1.1%	No
	Torrance	I-405	NB	AM	9,508	F	315.3	9,756	F	575.9	2.6%	Yes	9,789	F	646.7	10,037	F	7527.3	2.5%	Yes
			SB	AM	6,999	D	29.7	7,249	D	31.4	3.6%	No	7,206	D	31.1	7,456	D	32.8	3.5%	No
	I-405	SR-91	NB	AM	11,602	F	54.0	11,850	F	57.3	2.1%	Yes	11,944	F	58.7	12,192	F	62.5	2.1%	Yes
			SB	AM	8,540	E	44.1	8,790	F	47.0	2.9%	Yes	8,792	F	47.1	9,042	F	50.4	2.8%	Yes
	SR-91	Redondo Beach	NB	AM	9,037	D	32.6	9,096	D	33.0	0.7%	No	9,274	D	34.0	9,333	D	34.3	0.6%	No
			SB	AM	10,847	E	43.6	10,894	E	44.0	0.4%	No	11,131	F	46.2	11,178	F	46.7	0.4%	No
	Redondo Beach	Rosecrans	NB	AM	8,232	E	40.9	8,273	E	41.3	0.5%	No	8,476	E	43.4	8,517	E	43.9	0.5%	No
			SB	AM	9,880	F	65.2	9,912	F	66.0	0.3%	No	10,173	F	72.5	10,205	F	73.4	0.3%	No
I-405	I-710	Alameda	NB	AM	8,308	D	28.9	8,386	D	29.3	0.9%	No	8,552	D	30.1	8,630	D	30.5	0.9%	No
			SB	AM	11,328	F	125.5	11,423	F	133.4	0.8%	No	11,661	F	158.0	11,756	F	170.5	0.8%	No
	Alameda	Wilmington	NB	AM	8,302	D	27.6	8,429	D	28.2	1.5%	No	8,538	D	28.7	8,665	D	29.3	1.5%	No
			SB	AM	11,320	F	48.1	11,454	F	49.5	1.2%	No	11,641	F	51.6	11,775	F	53.2	1.2%	No
	Wilmington	Carson	NB	AM	8,002	E	37.1	8,169	E	38.6	2.1%	No	8,225	E	39.1	8,392	E	40.7	2.0%	No
			SB	AM	10,911	F	99.6	11,078	F	108.7	1.5%	No	11,215	F	117.3	11,382	F	130.0	1.5%	No
	Carson	Avalon	NB	AM	8,926	F	46.5	9,132	F	49.1	2.3%	Yes	9,185	F	49.8	9,391	F	52.7	2.2%	Yes
			SB	AM	7,324	D	31.9	7,523	D	33.3	2.7%	No	7,536	D	33.4	7,735	D	34.9	2.6%	No
	Avalon	I-110	NB	AM	9,419	D	34.9	9,536	E	35.6	1.2%	Yes	9,697	E	36.6	9,814	E	37.4	1.2%	No
			SB	AM	7,728	D	26.4	7,896	D	27.1	2.2%	No	7,956	D	27.4	8,124	D	28.1	2.1%	No
	I-110	Vermont	NB	AM	9,415	D	33.3	9,586	D	34.4	1.8%	No	9,688	E	35.0+	9,859	E	36.1	1.8%	No
			SB	AM	7,725	D	34.8	7,901	E	36.2	2.3%	Yes	7,949	E	36.6	8,125	E	38.2	2.2%	No
	Vermont	Normandie	NB	AM	9,558	E	35.7	9,688	E	36.6	1.4%	No	9,841	E	37.6	9,971	E	38.5	1.3%	No
			SB	AM	7,843	E	37.3	7,966	E	38.4	1.6%	No	8,075	E	39.4	8,198	E	40.6	1.5%	No
	Normandie	Western	NB	AM	9,477	F	57.2	9,572	F	58.9	1.0%	No	9,750	F	62.5	9,845	F	64.5	1.0%	No
			SB	AM	6,422	D	27.7	6,513	D	28.2	1.4%	No	6,607	D	28.7	6,698	D	29.3	1.4%	No
Western	Crenshaw	NB	AM	9,232	F	50.5	9,311	F	51.6	0.9%	No	9,492	F	54.3	9,571	F	55.5	0.8%	No	
		SB	AM	6,255	C	25.4	6,326	C	25.8	1.1%	No	6,432	D	26.4	6,503	D	26.8	1.1%	No	
Crenshaw	Redondo Beach	NB	AM	8,818	F	45.2	8,880	F	45.9	0.7%	No	9,073	F	48.3	9,135	F	49.1	0.7%	No	
		SB	AM	5,975	C	24.0	6,026	C	24.3	0.9%	No	6,148	C	24.9	6,199	C	25.1	0.8%	No	
I 710	Willow	I 405	NB	AM	5,995	E	38.6	6,015	E	38.9	0.3%	No	6,173	E	40.9	6,193	E	41.1	0.3%	No
			SB	AM	6,358	E	43.4	6,375	E	43.7	0.3%	No	6,547	F	46.3	6,564	F	46.6	0.3%	No
	I-405	Del Amo	NB	AM	6,557	D	28.4	6,590	D	28.6	0.5%	No	6,751	D	29.6	6,784	D	29.8	0.5%	No
			SB	AM	7,326	D	33.3	7,356	D	33.5	0.4%	No	7,543	D	34.9	7,573	E	35.1	0.4%	Yes
	Del Amo	Long Beach	NB	AM	6,806	C	22.9	6,839	C	23.0	0.5%	No	7,008	C	23.6	7,041	C	23.7	0.5%	No
			SB	AM	7,605	E	35.4	7,635	E	35.6	0.4%	No	7,830	E	37.2	7,860	E	37.5	0.4%	No

**TABLE 10B
THE DISTRICT AT SOUTH BAY
FREEWAY SEGMENT IMPACT ANALYSIS - PM PEAK HOUR**

Fwy Name	From	To	Dir	Period	Existing (Year 2017)			Existing with Project			Percent Increase	Change in MOE?	Future (Year 2023)			Future with Project			Percent Increase	Change in MOE?
					Volume	LOS	Density	Volume	LOS	Density			Volume	LOS	Density	Volume	LOS	Density		
SR-91	I-110	Avalon	WB	PM	6,034	C	21.9	6,094	C	22.1	1.0%	No	6,214	C	22.6	6,274	C	22.8	1.0%	No
			EB	PM	7,661	C	21.4	7,789	C	21.8	1.7%	No	7,889	C	22.1	8,017	C	22.4	1.6%	No
	Avalon	Central	WB	PM	6,155	C	20.6	6,303	C	21.2	2.4%	No	6,338	C	21.3	6,486	C	21.8	2.3%	No
			EB	PM	7,814	D	26.8	7,942	D	27.3	1.6%	No	8,047	D	27.8	8,175	D	28.3	1.6%	No
	Central	Wilmington	WB	PM	6,275	C	21.0	6,423	C	21.6	2.4%	No	6,462	C	21.7	6,610	C	22.2	2.3%	No
			EB	PM	7,968	D	27.4	8,096	D	28.0	1.6%	No	8,204	D	28.5	8,332	D	29.1	1.6%	No
I-110	SR-1	Sepulveda	NB	AM	4,874	C	20.4	4,950	C	20.8	1.6%	No	5,018	C	21.0	5,094	C	21.4	1.5%	No
			SB	AM	7,403	D	33.9	7,473	D	34.4	0.9%	No	7,622	E	35.5	7,692	E	36.1	0.9%	No
	Sepulveda	Carson	NB	PM	5,442	C	21.5	5,559	C	22.0	2.1%	No	5,603	C	22.2	5,720	C	22.8	2.1%	No
			SB	PM	7,512	D	34.7	7,618	E	35.5	1.4%	Yes	7,734	E	36.4	7,840	E	37.3	1.4%	No
	Carson	Torrance	NB	PM	6,263	C	25.5	6,396	D	26.2	2.1%	Yes	6,448	D	26.5	6,581	D	27.2	2.1%	No
			SB	PM	8,645	E	43.3	8,767	E	44.6	1.4%	No	8,901	F	46.2	9,023	F	47.7	1.4%	No
	Torrance	I-405	NB	PM	6,628	F	45.4	7,006	F	52.0	5.7%	Yes	6,823	F	48.6	7,201	F	56.0	5.5%	Yes
			SB	PM	9,149	F	49.3	9,574	F	55.6	4.6%	Yes	9,419	F	53.2	9,844	F	60.4	4.5%	Yes
	I-405	SR-91	NB	PM	8,087	D	27.9	8,465	D	29.7	4.7%	No	8,326	D	29.0	8,704	D	30.9	4.5%	No
			SB	PM	11,163	F	113.9	11,588	F	149.5	3.8%	Yes	11,493	F	139.8	11,918	F	196.7	3.7%	Yes
	SR-91	Redondo Beach	NB	PM	8,773	D	31.2	8,841	D	31.6	0.8%	No	9,002	D	32.4	9,070	D	32.8	0.8%	No
			SB	PM	10,709	E	42.4	10,791	E	43.1	0.8%	No	10,989	E	44.9	11,071	F	45.6	0.7%	Yes
	Redondo Beach	Rosecrans	NB	AM	7,990	E	38.6	8,035	E	39.0	0.6%	No	8,228	E	40.8	8,273	E	41.3	0.5%	No
			SB	AM	9,754	F	62.5	9,809	F	63.7	0.6%	No	10,044	F	69.1	10,099	F	70.5	0.5%	No
I-405	I-710	Alameda	NB	PM	8,536	D	30.0	8,679	D	30.8	1.7%	No	8,787	D	31.3	8,930	D	32.0	1.6%	No
			SB	PM	10,930	F	100.7	11,051	F	107.2	1.1%	No	11,251	F	119.8	11,372	F	129.1	1.1%	No
	Alameda	Wilmington	NB	PM	8,530	D	28.6	8,765	D	29.8	2.8%	No	8,772	D	29.8	9,007	D	31.1	2.7%	No
			SB	PM	10,922	E	44.3	11,133	F	46.2	1.9%	Yes	11,232	F	47.2	11,443	F	49.4	1.9%	No
	Wilmington	Carson	NB	PM	8,221	E	39.0	8,525	E	42.0	3.7%	No	8,451	E	41.2	8,755	E	44.5	3.6%	No
			SB	PM	10,527	F	83.5	10,804	F	94.5	2.6%	Yes	10,821	F	95.4	11,098	F	109.8	2.6%	Yes
	Carson	Avalon	NB	PM	8,124	E	38.2	8,496	E	41.7	4.6%	No	8,359	E	40.3	8,731	E	44.2	4.5%	No
			SB	PM	9,264	F	50.9	9,607	F	56.2	3.7%	Yes	9,533	F	55.0	9,876	F	60.9	3.6%	Yes
	Avalon	I-110	NB	PM	8,572	D	30.2	8,807	D	31.4	2.7%	No	8,826	D	31.5	9,061	D	32.8	2.7%	No
			SB	PM	9,776	E	37.1	10,033	E	38.9	2.6%	No	10,065	E	39.2	10,322	E	41.1	2.6%	No
	I-110	Vermont	NB	PM	8,569	D	28.8	8,843	D	30.2	3.2%	No	8,817	D	30.1	9,091	D	31.5	3.1%	No
			SB	PM	9,773	F	59.0	10,077	F	65.0	3.1%	Yes	10,055	F	64.6	10,359	F	71.7	3.0%	Yes
	Vermont	Normandie	NB	PM	8,700	D	30.8	8,890	D	31.8	2.2%	No	8,957	D	32.2	9,147	D	33.3	2.1%	No
			SB	PM	9,921	F	66.2	10,136	F	71.5	2.2%	Yes	10,215	F	73.7	10,430	F	80.1	2.1%	Yes
	Normandie	Western	NB	PM	9,050	F	50.5	9,205	F	52.8	1.7%	No	9,311	F	54.4	9,466	F	57.0	1.7%	No
			SB	PM	9,758	F	62.6	9,929	F	66.4	1.8%	No	10,039	F	69.0	10,210	F	73.5	1.7%	No
	Western	Crenshaw	NB	PM	8,815	F	45.2	8,938	F	46.6	1.4%	No	9,064	F	48.2	9,187	F	49.8	1.4%	No
			SB	PM	9,504	F	54.5	9,639	F	56.7	1.4%	No	9,773	F	59.0	9,908	F	61.6	1.4%	No
Crenshaw	Redondo Beach	NB	PM	8,421	E	41.0	8,511	E	41.8	1.1%	No	8,664	E	43.5	8,754	E	44.4	1.0%	No	
		SB	PM	9,079	F	48.4	9,180	F	49.8	1.1%	No	9,341	F	52.0	9,442	F	53.5	1.1%	No	
I 710	Willow	I 405	NB	AM	5,458	D	33.0	5,492	D	33.3	0.6%	No	5,620	D	34.5	5,654	D	34.9	0.6%	No
			SB	AM	5,724	E	35.6	5,757	E	36.0	0.6%	No	5,894	E	37.5	5,927	E	37.8	0.6%	No
	I-405	Del Amo	NB	PM	6,781	D	29.8	6,838	D	30.1	0.8%	No	6,982	D	31.0	7,039	D	31.4	0.8%	No
			SB	PM	6,414	D	27.6	6,467	D	27.9	0.8%	No	6,604	D	28.7	6,657	D	29.0	0.8%	No
	Del Amo	Long Beach	NB	PM	7,039	C	23.7	7,096	C	23.9	0.8%	No	7,248	C	24.5	7,305	C	24.7	0.8%	No
			SB	PM	6,658	D	29.0	6,711	D	29.3	0.8%	No	6,856	D	30.2	6,909	D	30.5	0.8%	No

**TABLE 11
THE DISTRICT AT SOUTH BAY PROJECT
RAMP QUEUEING SUMMARY (95TH PERCENTILE)**

NO.	INTERSECTION	Storage Capacity (feet)	Peak Hour	Existing (2017)			Existing plus Project			Future Base (2023)			Future plus Project (2023)		
				Delay (seconds)	HCM LOS	95th Percentile Queue (feet)	Delay (seconds)	HCM LOS	95th Percentile Queue (feet)	Delay (seconds)	HCM LOS	95th Percentile Queue (feet)	Delay (seconds)	HCM LOS	95th Percentile Queue (feet)
2	Figueroa Street & I-405 northbound off-ramp	640	AM	143.3	F	365	165.4	F	390	171.8	F	405	195.4	F	428
			PM	84.6	F	145	98.3	F	323	101.8	F	163	119.4	F	173
4	Main Street & I-405 northbound off-ramp	600	AM	20.3	C	126	20.5	C	129	20.9	C	131	24.9	C	154
			PM	23.8	C	95	32.0	C	92	28.1	C	75	32.8	C	100
11	Hamilton Avenue & I-110 southbound ramps	600	AM	50.8	F	325	56.4	F	323	60.3	F	368	65.0	F	353
			PM	16.3	C	58	46.1	E	355	16.9	C	60	57.0	F	417
12	Figueroa Street & I-110 northbound ramps	600	AM	75.4	E	291	46.1	D	295	83.7	F	287	45.4	D	332
			PM	27.1	C	117	32.7	C	177	28.2	C	126	32.9	C	174
17 [a]	Lenardo Drive & I-405 southbound ramps	750	AM				5.5	A	138				5.5	A	151
			PM				10.1	B	118				10.5	B	130
18 [a]	Avalon Boulevard & Lenardo Dr/I-405 SB ramps	>1,000	AM	12.5	B	228				12.6	B	251			
			PM	15.7	B	120				15.4	B	143			
19	Avalon Boulevard & I-405 northbound ramps	600	AM	15.3	B	35	16.6	B	83	15.3	B	36	16.6	B	84
			PM	15.3	B	35	20.6	C	131	15.3	B	36	23.6	C	144
26	I-405 southbound ramps & Carson Street	850	AM	42.4	D	72	24.2	C	70	18.1	B	29	16.7	B	56
			PM	30.4	C	41	40.0	D	49	14.6	B	36	17.8	B	41
27	I-405 northbound ramps & Carson Street	900	AM	12.6	B	129	12.6	B	133	12.9	B	140	12.9	B	143
			PM	14.5	B	71	13.5	B	109	14.9	B	104	14.9	B	109

[a] Intersection 18 serves as the control for the off-ramp in Existing and Future Base scenarios. Intersection 17 serves as the control for the off-ramp during Project scenarios.

7. SITE ACCESS ANALYSIS

The proposed modified Project would have the following access locations:

- One of the three major access locations would be at the study intersection 9 - Del Amo Boulevard & Street "B" (also referred to as Stamps Drive) where the northbound leg of Street "B" would provide vehicular access to and from the modified Project south of Del Amo Boulevard. This intersection would be signalized as part of the modified Project.
- The second major access location for the modified Project would be provided at study intersection 13 - Main Street & Street "A" (also referred to as Lenardo Road). This intersection would be signalized as part of the modified Project.
- The third major access location would be provided at study intersection 17 - I-405 southbound on-/off-ramps and Street "A" (also referred to as Lenardo Road) that connects to Avalon Boulevard to the east. This intersection will provide access to the modified Project from the I-405 southbound off-ramp and from the intersection of Lenardo Road & Avalon Boulevard (study intersection 18). Trips leaving the modified Project through this intersection will all continue east to the intersection of Lenardo Road & Avalon Boulevard (study intersection 18). Study intersection configurations are included in Appendix B. This signal would be modified as part of the modified Project.
- A stop-controlled driveway would be provided on along Del Amo Boulevard between the intersections of Del Amo Boulevard & Street "B" (study intersection 8) and Del Amo Boulevard & Main Street (study intersection 9). This access would facilitate residential access to the modified Project and would provide right-turn-in and right-turn-out movements only.

The approved Project included all of the above project access points and driveways in the analysis. At the time of the approved Project, the Avalon Boulevard and I-405 Freeway interchange had not been reconfigured but was assumed to be in place upon the buildout of the approved Project.

Figure 7 shows the site plan and Project site access.

The site-plan shows internally facing businesses with parking primarily within the central core of the site. There is minimal street parking available within the study area and the neighborhoods closest to the Project site are physically separated from the Project site by the Torrance Lateral Flood Control Channel. Based on the parking supply, site plan design, and physical separation between the Project site and any available on-street neighborhood parking, parking spill-over in to the adjacent neighborhood is not anticipated. Visitor parking is not expected to cause an adverse effect on on-street parking resources in the communities surrounding the Project site.



LEVEL OF SERVICE ANALYSIS FOR PROJECT SITE ACCESS LOCATIONS

A level of service analysis was conducted to evaluate the ability of the modified Project's access plan to accommodate the anticipated traffic levels at the site access points.

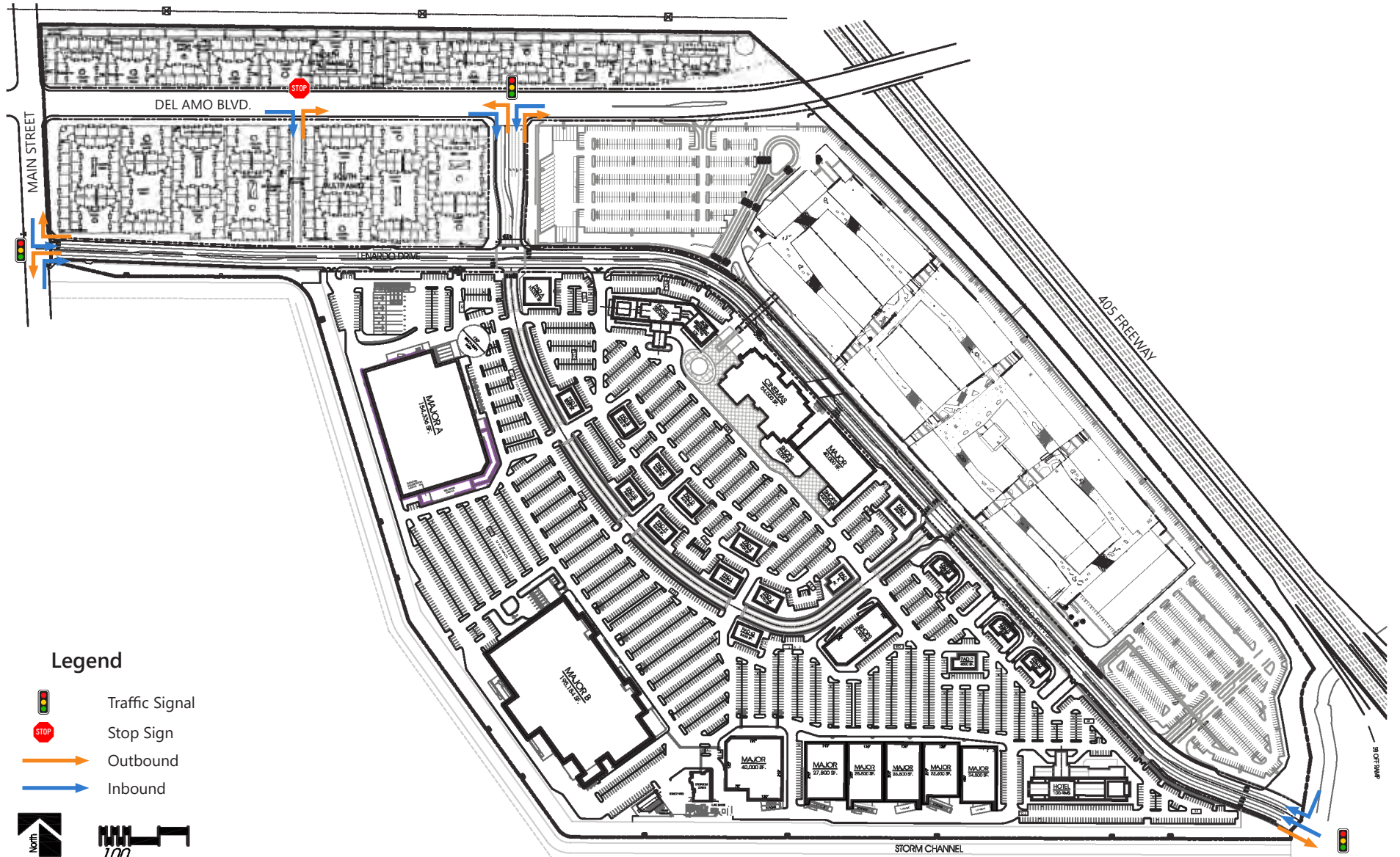
The three signalized site access locations described above were analyzed as part of Chapter 4 using the ICU methodology. The minor access driveway was analyzed using HCM methodology. The HCM methodology determines the average vehicle delay for the stop-controlled approach to find the corresponding LOS based on the definitions presented in Table 2B. Site access analysis LOS worksheets are included in Appendix D. Table 12 shows the results of the LOS analysis at the site access locations.

As shown in Table 12, the signalized intersections providing Project access are projected to operate at LOS D or better under Existing plus Project (2017) and Future plus Project (2023) conditions. The stop-controlled residential driveway is projected to operate at LOS E during the PM peak hours under both Project scenarios.

QUEUING ANALYSIS FOR PROJECT SITE ACCESS LOCATIONS

A queuing analysis was also conducted to identify any queuing at turning movements at these future modified Project intersections. Table 13 presents the 95th percentile (worst-case) queues at the modified Project access locations under Existing plus Project and Future plus Project conditions. As shown in the table, it is recommended that the future Project intersections are built to accommodate the queue lengths shown at the 95th percentile. Analysis sheets are provided in Appendix H.





Ingress: Westbound right turn from I-405 S
 Westbound through from Avalon Boulevard
 Egress: Eastbound through to Avalon Boulevard

Legend







-  Traffic Signal
-  Stop Sign
-  Outbound
-  Inbound
-  North
-  100



Image Source: Nadel Retail Architects, LLP

Figure 7
 Site Access

**TABLE 12
THE DISTRICT AT SOUTH BAY PROJECT
PROJECT SITE ACCESS LOS ANALYSIS**

NO.	INTERSECTION/DRIVEWAY	Peak Hour	Existing plus Project	Future plus Project (2023)
			LOS [a]	LOS [a]
9	Stamps Drive & Del Amo Boulevard	AM	A	A
		PM	D	C
13	Main Street & Lenardo Drive	AM	A	A
		PM	A	A
17	Lenardo Drive & I-405 southbound ramps	AM	A	A
		PM	A	A
Stop-Controlled Driveway	Residential Driveway & Del Amo Boulevard	AM	C	C
		PM	E	E

[a] All LOS based on ICU methodology except for the driveway, which is based on HCM.

**TABLE 13
THE DISTRICT AT SOUTH BAY PROJECT
PROJECT SITE ACCESS QUEUING ANALYSIS**

NO.	INTERSECTION	Movement [a]	Peak Hour	Existing plus Project (2017)	Future plus Project (2023)
				95th Percentile Queue (feet)	95th Percentile Queue (feet)
9	Stamps Drive & Del Amo Boulevard	EBL	AM		26
			PM		85
		EBR	AM	56	67
			PM	92	110
		WBL	AM	88	85
			PM	138	196
NBL	AM	136	151		
	PM	197	259		
NBR	AM	44	44		
	PM	55	59		
SBL	AM		37		
	PM		19		
13	Main Street & Lenardo Drive	WBL	AM	62	62
			PM	113	113
		WBR	AM	69	71
			PM	87	92
NBR	AM	36	36		
	PM	50	50		
SBL	AM	85	86		
	PM	103	103		
17	Lenardo Drive & I-405 Southbound Ramps	SBL	AM	139	150
			PM	117	130
Dwy	Residential Driveway & Del Amo Boulevard	NBR	AM	15	15
			PM	13	15

[a] EBL = eastbound left turn, EBR = eastbound right turn, WBL = westbound left turn, WBR = westbound right turn, NBL = northbound left turn, NBR = northbound right turn, SBL = southbound left turn, SBR = southbound right turn

8. CONSTRUCTION PERIOD IMPACT ANALYSIS

PROJECT SCHEDULE OF CONSTRUCTION ACTIVITY

The modified Project is proposed to be constructed in several phases. For each phase, construction is anticipated to take place in five phases. Remedial work has been underway at the Project site for some time. Some of the aspects below (such as remedial construction) may take place concurrently for different phases of the development, while others may happen at different times during the construction period (to estimated modified Project completion in 2023):

- Phase I – Remedial Construction
- Phase II – Horizontal Construction
- Phase III – Building Construction
- Phase IV – Paving
- Phase V – Architectural Coating

The City of Carson Municipal Code provides that construction activities are limited to the hours of 7:00 AM to 6:00 PM on weekdays, unless otherwise permitted by the City Engineer. Construction is not anticipated to take place on Sundays.

CONSTRUCTION TRUCKS

The modified Project is expected to generate equipment and delivery trucks during each phase of construction. One example would be concrete delivery, which would be required for the buildings on-site. Other materials could include plumbing supplies, electrical fixtures, and items used in furnishing the buildings. These materials would be delivered to the site and stored on-site. These deliveries are expected to occur in variously sized vehicles including small delivery trucks to cement mixer trucks and 18-wheel trucks. Additionally, construction equipment would 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.

The modified Project is expected to generate up to 124 delivery trucks per day on peak activity days while Phase I and Phase II overlap during the month of November. However, minimal delivery/equipment trucks are expected to be needed under the remedial phase. Two delivery trucks per day are generated by Phase I and 122 delivery trucks per day are generated by Phase II. Pile driving and Deep Dynamic Compaction occurs on-site during the horizontal phase but does not occur during the month associated with peak activity days and is therefore associated with minimal additional trips. For the modified Project, soil is expected to be balanced on-site and no haul trips are expected during the peak activity days. This haul activity is consistent with the approved Project.



CONSTRUCTION EMPLOYEES

The number of construction workers would vary throughout the construction period with the building construction stage generating the highest number of trips. During Phase III, the modified Project is expected to involve a total of 562 workers on site during peak construction days.

CONSTRUCTION WORKER PARKING

During all phases of construction, construction workers are anticipated to park on-site at the western end of Cell 1 and at the southern end of Cell 3 adjacent to the existing landfill operations.

CONSTRUCTION IMPACT ASSESSMENT

TEMPORARY TRAFFIC IMPACTS

During all phases of construction, there will be no full-time closures to any parking or travel lanes near the Project site. Parking is currently permitted on Main Street. Since there are no lane closures during construction, there will be no anticipated construction impacts on the roadway network.

There are no sidewalk closures for the duration of construction. The sidewalks along Main Street and Del Amo Boulevard fronting the construction site will be open during construction. As such, there are no anticipated pedestrian impacts during construction.

CONSTRUCTION PERIOD TRIP GENERATION

The following describes traffic activity associated with the construction of the modified Project, including an evaluation of the modified Project's construction period impacts considering the aforementioned factors, as applicable. The construction period intersection impact analysis focuses on the period of peak construction traffic activity. Most of the traffic attributable to construction activity results from two components:

- Deliveries of material and equipment
- Construction worker traffic

Based on the aforementioned information, a construction period trip generation analysis was conducted for each phase of construction to estimate daily, morning and evening peak hour passenger car equivalent (PCE) trips. 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 will arrive during the peak morning commute hour and 40% will depart during the peak evening commute hour. Haul and delivery/equipment trucks were assumed to occur evening throughout the 11-hour construction day. A PCE factor of 2.0 was used for delivery trucks.



Table 14 shows a summary of construction period trip generation under each phase of construction. While there are overlapping phases of construction, the peak construction activity day would occur during the building construction phase. The maximum trip generation total is estimated at 1,584 daily PCE trips, of which 267 PCE trips would occur during each of the morning and evening peak hours.

At any given time, the peak construction activity is estimated to generate substantially fewer daily and peak hour trips than are projected for the modified Project once it is completed and occupied (57,218 daily trips, 2,775 AM peak hour trips, and 4,291 PM peak hour trips, as shown in Table 4). Therefore, construction-related traffic impacts for the duration of the construction period are expected to be less than the number of significant traffic impacts determined to be generated by the operations of the modified Project.

Influx of material and equipment could create adverse traffic effects 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 will be needed for the parking garage 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 Main Street and Del Amo Boulevard as they deliver their items. Based on experience, it is not uncommon for these types of deliveries to result in temporary lane closures.

CONSTRUCTION MITIGATION MEASURES

Impacts related to construction traffic were found to be less than estimated under Project Operations as the peak construction activity is expected to generate fewer daily and peak hour trips than are projected for the modified Project once it is completed and occupied. As mitigations for the construction period related significant traffic impacts, a Construction Traffic Management Plan should be implemented.

A Construction Traffic Management Plan will be developed by the contractor and approved by the City of Carson to alleviate construction period impacts, which may include but is not limited to the following measures:

- Provide off-site truck staging in a legal approved area (per the local jurisdiction municipal code) furnished by the construction truck contractor. Anticipated truck access to the Project site will be off Street "B" and Street "A".
- Schedule deliveries and pick-ups of construction materials during non-peak travel periods to the extent possible and coordinate to reduce the potential of trucks waiting to load or unload for protracted periods.

If any vehicular travel lane, parking lane, bicycle lane, and/or sidewalk closures are anticipated, worksite traffic control plan(s), approved by the City of Carson should be implemented to route vehicular traffic, bicyclists, and pedestrians around any such closures.



**TABLE 14
THE DISTRICT AT SOUTH BAY
CONSTRUCTION PERIOD TRIP GENERATION**

Peak Day Activity Under Each Phase

	Remedial	Horizontal	Building Construction	Paving	Architectural Coating
<i>Construction Workers</i>	51	212	562	30	94
Passenger Car Equivalent (PCE) factor	1.0	1.0	1.0	1.0	1.0
<i>Delivery/Equipment Truckloads</i>	12	122	115	0	0
Passenger Car Equivalent (PCE) factor	2.0	2.0	2.0	2.0	2.0

CONSTRUCTION PERIOD TRIP GENERATION

Phase	Daily PCE Trips [1]	Morning Peak Hour PCE Trips			Evening Peak Hour PCE Trips		
		In	Out	Total	In	Out	Total
Remedial							
Construction Worker Trips[2]	102	20	0	20	0	20	20
Delivery/Equipment Truck Trips [3]	48	2	2	4	2	2	4
Phase 1 Total	150	22	2	24	2	22	24
Horizontal							
Construction Worker Trips[2]	424	85	0	85	0	85	85
Delivery/Equipment Truck Trips [3]	488	22	22	44	22	22	44
Phase 2 Total	912	107	22	129	22	107	129
Building Construction							
Construction Worker Trips[2]	1,124	225	0	225	0	225	225
Delivery/Equipment Truck Trips [3]	460	21	21	42	21	21	42
Phase 3 Total	1,584	246	21	267	21	246	267
Paving							
Construction Worker Trips[2]	60	12	0	12	0	12	12
Delivery/Equipment Truck Trips [3]	0	0	0	0	0	0	0
Phase 4 Total	60	12	0	12	0	12	12
Architectural Coating							
Construction Worker Trips[2]	188	38	0	38	0	38	38
Delivery/Equipment Truck Trips [3]	0	0	0	0	0	0	0
Phase 5 Total	188	38	0	38	0	38	38

PCE - Passenger car equivalent

Notes:

[1] - Daily trips were calculated by counting two trips, one inbound and one outbound trip for each vehicle

[2] - Up to 40% of the construction workers were assumed to arrive during the morning peak hour of adjacent street traffic. A total of up to 40% worker were assumed to depart during the evening peak hour.

[3] - Daily haul, delivery/equipment, and trash truck trips were assumed to occur evenly throughout an 11-hour construction day. Therefore, the daily truck trips were divided by 11 hours to calculate morning and evening peak hour truck trips.

- Establish requirements for loading/unloading and storage of materials on the Project site, where parking spaces would be encumbered, length of time traffic travel lanes can be encumbered, sidewalk closings or pedestrian diversions to ensure the safety of the pedestrian and access to local businesses and residences.
- Ensure that access will remain unobstructed for land uses in proximity to the Project site during Project construction.
- Coordinate with the City and emergency service providers to ensure adequate access is maintained to the Project site and neighboring businesses and residences.

With implementation of these measures, impacts from the construction activity on transportation facilities could be reduced.



9. ALTERNATIVES ANALYSIS

This chapter presents a qualitative assessment of traffic impacts for a potential lower density alternative to the District Project relative to the impacts of the modified Project itself.

This lower-density alternative will be referred to here as Alternative 2. Under Alternative 2, the Project site would be developed under the same Specific Plan as the proposed modified Project, with the same mix of uses, except that development would be reduced across the board by 25%. All other project development standards would be unchanged from those set forth for the proposed modified Project.

As indicated in Table 15A, Alternative 2 is projected to generate 2,112 trips during weekday morning peak hour, weekday 3,331 trips during the afternoon peak hour, and approximately 44,360 weekday daily trips. Compared to the proposed modified Project, Alternative 2 is projected to generate approximately 24% fewer trips during the morning peak hour, 22% fewer trips during the afternoon peak hour, and 22% fewer daily trips.

The intersection impact methodology presented as part of the modified Project analysis was applied to Alternative 2. Tables 15B and 15C show the Existing (2017) year and Future (2023) year analysis results based on the Alternative 2 trip generation. Level of Service analysis sheets are included in Appendix I.

The Alternative 2 intersection impact analysis identified the following eight significantly impacted intersections during the Existing plus Project analysis:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour Only)
5. Vermont Avenue & Del Amo Boulevard (AM and PM Peak Hours)
7. Figueroa Street & Del Amo Boulevard (PM Peak Hour Only)
8. Main Street & Del Amo Boulevard (PM Peak Hour Only)
10. Avalon Boulevard & Del Amo Boulevard (AM and PM Peak Hours)
12. Figueroa Street & I-110 northbound ramps (AM and PM Peak Hours)
23. Figueroa Street & Carson Street (AM and PM Peak Hours)
25. Avalon Boulevard & Carson Street (PM Peak Hour Only)

The modified Project Existing year analysis results in significant impacts at the same nine intersections but also at the following two intersections:

20. Main Street & 213th Street (PM Peak Hour Only)
22. Vermont Avenue & Carson Street (AM and PM Peak Hours)



The Alternative 2 intersection impact analysis identified nine significantly impacted intersections during the Future plus Project analysis:

3. Main Street & I-405 southbound on-ramp (PM Peak Hour Only)
5. Vermont Avenue & Del Amo Boulevard (AM and PM Peak Hours)
7. Figueroa Street & Del Amo Boulevard (AM and PM Peak Hours)
8. Main Street & Del Amo Boulevard (PM Peak Hour Only)
10. Avalon Boulevard & Del Amo Boulevard (AM and PM Peak Hours)
12. Figueroa Street & I-110 northbound ramps (AM and PM Peak Hours)
20. Main Street & 213th Street (PM Peak Hour Only)
22. Vermont Avenue & Carson Street (AM and PM Peak Hours)
25. Avalon Boulevard & Carson Street (AM and PM Peak Hours)

The modified Project Future year analysis results in significant impacts at the same nine intersections but also at the following intersection:

15. Figueroa Street & Torrance Boulevard (PM Peak Hour only)

Upon applying the mitigations discussed under the Mitigations section to significantly impacted intersections under Alternative 2, the following intersections are determined to remain significant and unavoidable under this Alternative:

3. Main Street & I-405 SB On-Ramp (Caltrans Jurisdiction)
5. Vermont Avenue & Del Amo Boulevard (Los Angeles County/City of Los Angeles Jurisdiction)
7. Hamilton Avenue & Del Amo Boulevard (Physical mitigation does not fully mitigate and would require removing the median island)
8. Main Street & Del Amo Boulevard (Physical mitigation would require removing the median island and acquisition of private land)
10. Avalon Boulevard & Del Amo Boulevard (Physical mitigation would require removing the median island)
12. Figueroa Street & I-110 NB Ramps (Los Angeles County & Caltrans)
22. Vermont Avenue & Carson Street (Los Angeles County)

The significant and unavoidable impacts identified as part of the Alternative 2 analysis are at the same intersections as the modified Project significant and unavoidable impacts.

Significant impacts are anticipated to the regional freeway and public transit systems under Alternative 2, but to a lesser magnitude compared to the modified Project. No ramp queuing impacts are expected. Given the similar nature and scale of Project Alternative 2 and the modified Project, it is expected that the construction impacts would be of similar scale and for a similar duration.



**TABLE 15A
THE DISTRICT AT SOUTH BAY
PROJECT ALTERNATIVE 2 TRIP GENERATION**

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]									Trip Rate Unit	Estimated Trip Generation					
			Daily Rate	AM Peak Hour			PM Peak Hour			Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips				
				Rate	% In	% Out	Rate	% In	% Out		In		Out	Total	In	Out	Total	
Shopping Center	820	476.250 ksf	[e]	[e]	62%	38%	[e]	48%	52%	per ksf	18,730	250	154	404	818	887	1,705	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(187)	(3)	(2)	(5)	(8)	(9)	(17)	
Internal capture [c]			10%		10%	10%		20%	20%		(1,854)	(25)	(15)	(40)	(162)	(176)	(338)	
Total Driveway Trips											16,689	222	137	359	648	702	1,350	
Pass-by credit [d]											(1,669)	(22)	(14)	(36)	(65)	(70)	(135)	
Net New Trips											15,020	200	123	323	583	632	1,215	
Luxury Outlet Shops [h]	823	435.765 ksf	26.59	0.67	73%	27%	2.29	47%	53%	per ksf	11,587	213	79	292	469	529	998	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(116)	(2)	(1)	(3)	(5)	(5)	(10)	
Internal capture [c]			10%		10%	10%		20%	20%		(1,147)	(21)	(8)	(29)	(93)	(105)	(198)	
Total Driveway Trips											10,324	190	70	260	371	419	790	
Pass-by credit [d]											(1,032)	(19)	(7)	(26)	(37)	(42)	(79)	
Net New Trips											9,292	171	63	234	334	377	711	
Restaurant (High Turnover Sit-down)	932	105.000 ksf	127.15	10.81	55%	45%	9.85	60%	40%	per ksf	13,351	624	511	1,135	620	414	1,034	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(134)	(6)	(5)	(11)	(6)	(4)	(10)	
Internal capture [c]			20%		10%	10%		30%	30%		(2,643)	(62)	(51)	(113)	(184)	(123)	(307)	
Total Driveway Trips											10,574	556	455	1,011	430	287	717	
Pass-by credit [d]											(1,057)	(56)	(46)	(102)	(43)	(29)	(72)	
Net New Trips											9,517	500	409	909	387	258	645	
Multiplex Movie Theater	443/445 [f]	1,875 Seats 60,000 KSF	1.76	0.010	60%	40%	0.10	60%	40%	per seat	3,300	11	8	19	113	75	188	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(33)	0	0	0	(1)	(1)	(2)	
Internal capture [c]			10%		10%	10%		10%	10%		(327)	(1)	(1)	(2)	(11)	(7)	(18)	
Total Driveway Trips											2,940	10	7	17	101	67	168	
Pass-by credit [d]					0%	0%		10%	10%		(294)	0	0	0	(10)	(7)	(17)	
Net New Trips											2,646	10	7	17	91	60	151	
Multipurpose Recreational Facility	435 [g]	18.750 KSF	59.67	1.181	80%	20%	3.58	55%	45%	per ksf	1,119	18	4	22	37	30	67	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(11)	0	0	0	0	0	0	
Internal capture [c]			20%		0%	0%		20%	20%		(222)	0	0	0	(7)	(6)	(13)	
Total Driveway Trips											886	18	4	22	30	24	54	
Pass-by credit [d]					0%	0%		10%	10%		(89)	0	0	0	(3)	(2)	(5)	
Net New Trips											797	18	4	22	27	22	49	
Bowling Alley	437	18.750 KSF	33.33	3.130	60%	40%	3.54	55%	45%	per ksf	625	35	24	59	36	30	66	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(6)	0	0	0	0	0	0	
Internal capture [c]			20%		0%	0%		20%	20%		(124)	0	0	0	(7)	(6)	(13)	
Total Driveway Trips											495	35	24	59	29	24	53	
Pass-by credit [d]					0%	0%		10%	10%		(50)	0	0	0	(3)	(2)	(5)	
Net New Trips											445	35	24	59	26	22	48	
Hotel	310	263 rooms	8.17	0.53	59%	41%	0.60	51%	49%	per room	2,149	82	57	139	81	77	158	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(21)	(1)	(1)	(2)	(1)	(1)	(2)	
Internal capture [c]			20%		10%	10%		30%	30%		(426)	(8)	(6)	(14)	(24)	(23)	(47)	
Total Driveway Trips											1,702	73	50	123	56	53	109	
Net New Trips											1,702	73	50	123	56	53	109	
Residential	220	938 DU	6.65	0.51	20%	80%	0.62	65%	35%	per DU	6,238	96	382	478	378	204	582	
Transit, Walk, Bike credit [b]			1%		1%	1%		1%	1%		(62)	(1)	(4)	(5)	(4)	(2)	(6)	
Internal capture [c]			20%		10%	10%		30%	30%		(1,235)	(10)	(38)	(48)	(112)	(61)	(173)	
Total Driveway Trips											4,941	85	340	425	262	141	403	
Net New Trips											4,941	85	340	425	262	141	403	
Project Total											57,099	1,329	1,219	2,548	2,552	2,246	4,798	
Transit, Walk, Bike credit [b]											(570)	(13)	(13)	(26)	(25)	(22)	(47)	
Internal capture [c]											(7,978)	(127)	(119)	(246)	(600)	(507)	(1,107)	
Total Driveway Trips											48,551	1,189	1,087	2,276	1,927	1,717	3,644	
Pass-by credit [d]											(4,191)	(97)	(67)	(164)	(161)	(152)	(313)	
Project Total Trips											44,360	1,092	1,020	2,112	1,766	1,565	3,331	

Notes:

- Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, 2012, unless otherwise noted.
- A transit/walk/bike credit was informed by the built environment and walkability, local transit service, and on the results of MXD 2.0 Mixed Use Trip Generation Methodology to account for transit, walking, and biking access to the project site.
- Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by MXD 2.0 Mixed Use Trip Generation Methodology, which incorporated the findings of NCHRP Project 8-51 as described in "Improved Estimation for Internal Trip Capture for Mixed-use Developments," ITE Journal, August 2010.
- Pass-by credits were informed by ITE pass-by rates and the City of Los Angeles Traffic Study Guideline Pass-by recommendations. Rates were considered reasonable given the location of the site along a major regional thoroughfare.
- ITE Shopping Center trip generation equations used rather than trip generation rate:
 Daily: $\ln(T) = 0.65 * \ln(X) + 5.83$, where T = trips, X = area in ksf
 AM Peak Hour: $\ln(T) = 0.61 * \ln(X) + 2.24$, where T = trips, X = area in ksf
 PM Peak Hour: $\ln(T) = 0.67 * \ln(X) + 3.31$, where T = trips, X = area in ksf
- ITE rates for Multiplex Movie Theater (445) for Friday PM peak hour of adjacent streets were used for the PM Peak hour analysis. Multiplex Movie Theater rate not available for Daily or AM analysis, ITE rates for Movie Theater without Matinee (443) were used for Daily and AM
- Weekday daily and AM peak hour rates not available from ITE. Weekday PM peak hour trips assumed to be 6% of the weekday daily trips, and weekday AM peak hour trips assumed to be 33% of the weekday PM peak hour trips.
- Land use is primarily luxury outlet center with other regional commercial uses; ITE factory outlet center rates were used to determine trip generation.

**TABLE 15B
THE DISTRICT AT SOUTH BAY PROJECT
PROJECT ALTERNATIVE 2
EXISTING PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS AND MITIGATIONS**

ID	N/S Street Name	E/W Street Name	Intersection Control	Jurisdiction [1,3]	Analyzed Period	Existing		Existing + Project		Project Increase In V/C or Delay (s)	Significant Impact?	Existing + Project + Mitigations		Project Increase In V/C or Delay (s)	Significant Impact?	
						V/C or Delay (s)	LOS	V/C or Delay (s)	LOS			V/C or Delay (s)	LOS			V/C or Delay (s)
1	Figueroa St	I-405 SB On Ramp	Unsignalized	City of Carson/ Caltrans	AM	0.9	B	0.9	B	0.0	NO					
					PM	7.9	C	8.3	D	0.4	NO					
2	Figueroa St	I-405 NB Off Ramp	TWSC	City of Carson/ Caltrans	AM	143.3	F	158.8	F	15.5	[1]					
					PM	84.6	F	96.2	F	11.6	[1]					
					AM	0.718	[1]	0.726	[1]	0.008	NO					
					PM	0.907	[1]	0.919	[1]	0.012	NO					
3	S Main St	I-405 SB On Ramp	Signalized	City of Carson/ Caltrans	AM	0.443	A	0.465	A	0.022	NO	0.440	A	-0.003	NO	
					PM	0.891	D	0.921	E	0.030	YES	0.713	C	-0.178	NO	
4	S Main St	I-405 NB Off Ramp	Signalized	City of Carson/ Caltrans	AM	0.547	A	0.570	A	0.023	NO					
					PM	0.663	B	0.693	B	0.030	NO					
5	Vermont Ave	Del Amo Blvd	Signalized	City of Los Angeles	AM	0.683	B	0.737	C	0.054	YES	0.647	B	-0.036	NO	
					PM	0.742	C	0.853	D	0.111	YES	0.707	C	-0.035	NO	
				Los Angeles County	AM	0.740	C	0.791	C	0.051	YES	0.676	B	-0.064	NO	
					PM	0.796	C	0.901	E	0.105	YES	0.747	C	-0.049	NO	
6	Hamilton Ave	Del Amo Blvd	AWSC	City of Los Angeles	AM	[1]										
					PM	[1]										
7	Figueroa St	Del Amo Blvd	Signalized	City of Carson	AM	0.828	D	0.894	D	0.066	NO	0.854	D	0.026	NO	
					PM	0.770	C	1.131	F	0.361	YES	0.905	E	0.135	YES	
8	S Main St	E Del Amo Blvd	Signalized	City of Carson	AM	0.694	B	0.813	D	0.119	NO	0.738	C	0.044	NO	
					PM	0.813	D	0.980	E	0.167	YES	0.801	D	-0.012	NO	
9	Stamps Dr	Del Amo Blvd	Project Intersection Signalized	City of Carson	AM			0.498	A							
					PM			0.676	B							
10	S Avalon Blvd	E Del Amo Blvd	Signalized	City of Carson	AM	0.843	D	0.906	E	0.063	YES	0.804	D	-0.039	NO	
					PM	0.892	D	0.969	E	0.077	YES	0.894	D	0.002	NO	
11	Hamilton Ave	I-110 SB Ramps	AWSC	Los Angeles County/ Caltrans	AM	[1]										
					PM	[1]										
12	Figueroa St	I-110 NB Ramps	Signalized	Los Angeles County/ Caltrans	AM	0.846	D	0.954	E	0.108	YES	0.724	C	-0.122	NO	
					PM	0.711	C	0.945	E	0.234	YES	0.713	C	0.002	NO	
13	Main St	Lenardo Dr	Project Intersection Signalized	City of Carson	AM			0.452	A							
					PM			0.522	A							
14	Hamilton Ave	W Torrance Blvd	Signalized	Los Angeles County	AM	0.733	C	0.743	C	0.010	NO					
					PM	0.624	B	0.648	B	0.024	NO					
15	Figueroa St	W Torrance Blvd	Signalized	City of Carson	AM	0.795	C	0.840	D	0.045	NO					
					PM	0.782	C	0.853	D	0.071	NO					
16	S Main St	W Torrance Blvd	Signalized	City of Carson	AM	0.631	B	0.691	B	0.060	NO					
					PM	0.753	C	0.802	D	0.049	NO					
17	Lenardo Dr	I-405 SB Ramps	Project Intersection Signalized	City of Carson/ Caltrans	AM			0.540	A							
					PM			0.461	A							
18	S Avalon Blvd	I-405 SB Ramps	Signalized	City of Carson/ Caltrans	AM	0.631	B	0.670	B	0.039	NO					
					PM	0.584	A	0.664	B	0.080	NO					
19	S Avalon Blvd	I-405 NB Ramps	Signalized	City of Carson/ Caltrans	AM	0.506	A	0.559	A	0.053	NO					
					PM	0.598	A	0.751	C	0.153	NO					
20	S Main St	E 213th St	Signalized	City of Carson	AM	0.807	D	0.853	D	0.046	NO	0.664	B	-0.143	NO	
					PM	0.810	D	0.884	D	0.074	NO	0.781	C	-0.029	NO	
21	S Avalon Blvd	E 213th St	Signalized	City of Carson	AM	0.640	B	0.667	B	0.027	NO					
					PM	0.745	C	0.788	C	0.043	NO					
22	S Vermont Ave	W Carson St	Signalized	Los Angeles County	AM	0.876	D	0.895	D	0.019	NO	0.793	C	-0.083	NO	
					PM	0.747	C	0.782	C	0.035	NO	0.723	C	-0.024	NO	
23	Figueroa St	W Carson St	Signalized	City of Carson	AM	0.942	E	0.997	E	0.055	YES	0.691	0	-0.251	NO	
					PM	1.063	F	1.148	F	0.085	YES	0.693	0	-0.370	NO	
24	S Main St	W Carson St	Signalized	City of Carson	AM	0.457	A	0.526	A	0.069	NO					
					PM	0.595	A	0.651	B	0.056	NO					
25	S Avalon Blvd	E Carson St	Signalized	City of Carson	AM	0.811	D	0.875	D	0.064	NO	0.773	C	-0.038	NO	
					PM	0.896	D	0.970	E	0.074	YES	0.890	D	-0.006	NO	
26	I-405 SB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.621	B	0.621	B	0.000	NO					
					PM	0.667	B	0.667	B	0.000	NO					
27	I-405 NB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.417	A	0.435	A	0.018	NO					
					PM	0.479	A	0.498	A	0.019	NO					

Notes
 TWSC Two-Way Stop Controlled
 AWSC All Way Stop Controlled
 [1] Methodology varies by Jurisdiction. If an intersection is located along a City border, both methodologies are applied.
 Signalized intersections within the City of Carson and Los Angeles County are analyzed with ICU methodology
 Signalized intersections within the City of Los Angeles are analyzed with CMA methodology
 Un-signalized intersections within the City of Los Angeles and Los Angeles County are not included in the impact analysis; instead, signal warrant analyses are conducted
 Un-signalized intersections within the City of Carson are analyzed with HCM 2010, if the worst approach LOS is E or F, then impacts are determined based on ICU v/c
 [2] Existing analysis evaluates LOS under construction lane configurations, future analysis assumes post-construction lane configurations
 [3] Mitigations at intersections under the jurisdiction of the City of Los Angeles, Los Angeles County, or Caltrans will require further coordination and detailed design review with the relevant jurisdiction to determine the feasibility of the mitigation. Any mitigation that is determined to be infeasible by the relevant jurisdiction would be determined to be significant and unavoidable.

**TABLE 15C
THE DISTRICT AT SOUTH BAY PROJECT
PROJECT ALTERNATIVE 2
FUTURE YEAR (2023) PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS AND MITIGATIONS**

ID	N/S Street Name	E/W Street Name	Intersection Control	Jurisdiction [1,3]	Analyzed Period	Future		Future + Project		Project Increase In V/C or Delay (s)	Significant Impact?	Future + Project + Mitigations		Project Increase In V/C or Delay (s)	Significant Impact?
						V/C or Delay (s)	LOS	V/C or Delay (s)	LOS			V/C or Delay (s)	LOS		
1	Figueroa St	I-405 SB On Ramp	Unsignalized	City of Carson/ Caltrans	AM PM	0.9 9.1	B D	0.9 9.7	B D	0.0 0.6	NO NO				
2	Figueroa St	I-405 NB Off Ramp	TWSC	City of Carson/ Caltrans	AM PM	171.8 101.8	F F	189.4 116.3	F F	17.1 14.3	[1] [1]				
					AM PM	0.738 0.933	[1] [1]	0.746 0.945	[1] [1]	0.008 0.012	NO NO				
3	S Main St	I-405 SB On Ramp	Signalized	City of Carson/ Caltrans	AM PM	0.457 0.917	A E	0.479 0.946	A E	0.022 0.029	NO YES	0.453 0.733	A C	-0.004 -0.184	NO NO
4	S Main St	I-405 NB Off Ramp	Signalized	City of Carson/ Caltrans	AM PM	0.563 0.683	A B	0.586 0.712	A C	0.023 0.029	NO NO				
5	S Vermont Ave	Del Amo Blvd	Signalized	City of Los Angeles	AM PM	0.712 0.775	C C	0.767 0.886	C D	0.055 0.111	YES YES	0.674 0.733	B C	-0.038 -0.042	NO NO
				Los Angeles County	AM PM	0.768 0.826	C D	0.818 0.930	D E	0.050 0.104	YES YES	0.700 0.772	B C	-0.068 -0.054	NO NO
6	Hamilton Ave	Del Amo Blvd	AWSC	City of Los Angeles	AM PM	[1]									
7	Figueroa St	Del Amo Blvd	Signalized	City of Carson	AM PM	0.853 0.819	D D	0.941 1.173	E F	0.088 0.354	YES YES	0.878 0.936	D E	0.025 0.117	NO YES
8	S Main St	E Del Amo Blvd	Signalized	City of Carson	AM PM	0.727 0.849	C D	0.847 1.017	D F	0.120 0.168	NO YES	0.770 0.837	C D	0.043 -0.012	NO NO
9	Stamps Dr	Del Amo Blvd	Project Intersection Signalized	City of Carson	AM PM			0.543 0.695	A B						
10	S Avalon Blvd	E Del Amo Blvd	Signalized	City of Carson	AM PM	0.874 0.937	D E	0.936 1.015	E F	0.062 0.078	YES YES	0.830 0.926	D E	-0.044 -0.011	NO NO
11	Hamilton Ave	I-110 SB Ramps	AWSC	Los Angeles County/ Caltrans	AM PM	[1]									
12	Figueroa St	I-110 NB Ramps	Signalized	Los Angeles County/ Caltrans	AM PM	0.874 0.734	D C	1.000 0.977	F E	0.126 0.243	YES YES	0.751 0.737	C C	-0.123 0.003	NO NO
13	Main St	Lenardo Dr	Project Intersection Signalized	City of Carson	AM PM			0.461 0.534	A A						
14	Hamilton Ave	W Torrance Blvd	Signalized	Los Angeles County	AM PM	0.756 0.643	C B	0.766 0.667	C B	0.010 0.024	NO NO				
15	Figueroa St	W Torrance Blvd	Signalized	City of Carson	AM PM	0.820 0.809	D D	0.864 0.881	D D	0.044 0.072	NO NO	0.840 0.858	D D	0.020 0.049	NO NO
16	S Main St	W Torrance Blvd	Signalized	City of Carson	AM PM	0.653 0.779	B C	0.712 0.826	C D	0.059 0.047	NO NO				
17	Lenardo Dr	I-405 SB Ramps	Project Intersection Signalized	City of Carson/ Caltrans	AM PM			0.556 0.476	A A						
18	S Avalon Blvd	I-405 SB Ramps	Signalized	City of Carson/ Caltrans	AM PM	0.663 0.612	B B	0.701 0.692	C B	0.038 0.080	NO NO				
19	S Avalon Blvd	I-405 NB Ramps	Signalized	City of Carson/ Caltrans	AM PM	0.527 0.619	A B	0.580 0.772	A C	0.053 0.153	NO NO				
20	S Main St	E 213th St	Signalized	City of Carson	AM PM	0.831 0.834	D D	0.877 0.908	D E	0.046 0.074	NO YES	0.682 0.801	B D	-0.149 -0.033	NO NO
21	S Avalon Blvd	E 213th St	Signalized	City of Carson	AM PM	0.661 0.776	B C	0.689 0.820	B D	0.028 0.044	NO NO				
22	S Vermont Ave	W Carson St	Signalized	Los Angeles County	AM PM	0.918 0.778	E C	0.936 0.813	E D	0.018 0.035	YES YES	0.830 0.749	D C	-0.088 -0.029	NO NO
23	Figueroa St	W Carson St	Signalized	City of Carson	AM PM	0.713 0.703	C C	0.722 0.715	C C	0.009 0.012	NO NO				
24	S Main St	W Carson St	Signalized	City of Carson	AM PM	0.481 0.623	A B	0.551 0.675	A B	0.070 0.052	NO NO				
25	S Avalon Blvd	E Carson St	Signalized	City of Carson	AM PM	0.872 0.951	D E	0.908 0.989	E E	0.036 0.038	YES YES	0.831 0.944	D E	-0.041 -0.007	NO NO
26	I-405 SB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM PM	0.652 0.704	B C	0.652 0.704	B C	0.000 0.000	NO NO				
27	I-405 NB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM PM	0.385 0.497	A A	0.459 0.516	A A	0.074 0.019	NO NO				

Notes

TWSC Two-Way Stop Controlled

AWSC All Way Stop Controlled

[1] Methodology varies by Jurisdiction. If an intersection is located along a City border, both methodologies are applied.

Signalized intersections within the City of Carson and Los Angeles County are analyzed with ICU methodology

Signalized intersections within the City of Los Angeles are analyzed with CMA methodology

Un-signalized intersections within the City of Los Angeles and Los Angeles County are not included in the impact analysis; instead, signal warrant analyses are conducted

Un-signalized intersections within the City of Carson are analyzed with HCM 2010, if the worst approach LOS is E or F, then impacts are determined based on ICU v/c

[2] Existing analysis evaluates LOS under construction lane configurations, future analysis assumes post-construction lane configurations

[3] Mitigations at intersections under the jurisdiction of the City of Los Angeles, Los Angeles County, or Caltrans will require further coordination and detailed design review with the relevant jurisdiction to determine the feasibility of the mitigation. Any mitigation that is determined to be infeasible by the relevant jurisdiction would be determined to be significant and unavoidable.

10. SUMMARY AND CONCLUSIONS

THE APPROVED PROJECT COMPARISON

The analysis conducted as part of this study presents the transportation analysis for The District at South Bay, which is a modified version of the approved Project. The Carson Marketplace Transportation Impact Analysis was conducted in 2005 with a future (buildout) analysis of Year 2010. Due to changes in the project description, built environment, and traffic operations, the transportation impact analysis for the modified Project was prepared in the context of 2017 Existing conditions and 2023 Future year conditions. For comparison purposes, the approved Project was re-analyzed under 2017 Existing conditions and 2023 Future year conditions (Appendix E). This section summarizes a comparison of the three analysis scenarios.

TRIP GENERATION

The trip generation for the modified Project is approximately 11% higher during the AM peak hour and 26% lower during the PM peak hour compared to the approved Project trip generation (Table 16A).

The trip generation model used for the modified Project differs from the trip generation model used for the approved Project. For comparison purposes, the approved Project was analyzed using the 2017 trip generation model. The modified Project trip generation was 1% higher in the AM and 21% lower in the PM compared to the approved Project analyzed using a 2017 trip generation model (Table 16A).

STUDY INTERSECTION IMPACT ANALYSIS

Table 16A compares the intersection impact analysis conducted for the approved Project analyzed in the 2005 traffic study and the approved Project re-analyzed based on the 2017 methodology, and the modified Project.

The modified Project has one fewer significantly impacted intersection and significant and unavoidable impacts at six additional intersections compared to the approved Project. The difference in number, degree, and location of significantly impacted intersections identified as part of the approved Project transportation impact analysis compared to the analysis for the modified Project is a result of changes in the background traffic conditions, related project traffic patterns, roadway and freeway capacity changes, as well as differences in methodology. The difference in the number of significant and unavoidable intersection impacts is a result of differences in methodology and changes in City of Carson policy and design standards whereby a number of physically feasible improvements are deemed infeasible because of conflict with City policies.

The modified Project has the same number of significant impacts and one fewer significant and unavoidable impact compared to the approved Project analyzed with the 2017 methodology (Table 16A). The difference in number, degree, and location of significant impacts identified between the modified Project and the approved Project analyzed with the 2017 stat-of-practice methodology is a result of differences in project description.



CMP IMPACT ANALYSIS

The proposed modified Project had less severe CMP transit impacts than the Carson Marketplace project (Table 16B). The proposed modified Project had no significant CMP arterial impacts. The Carson Marketplace analysis did not include a CMP arterial analysis, but it is expected that it could have triggered an additional impact based on the 26% difference in PM peak hour trips.

The CMP freeway analysis for the modified Project was a conducted at a single CMP monitoring station and identified PM peak hour impacts. The Carson Marketplace study identified only AM impacts at that location. The differences in number and severity of impacts is a result of changes in background traffic, freeway capacity, and regional development patterns. If the approved project were analyzed under the current conditions, the CMP freeway impacts would be more severe than for the modified Project.



**TABLE 16A
THE DISTRICT AT SOUTH BAY
STUDY INTERSECTION LEVEL OF SERVICE IMPACT COMPARISON**

		CARSON MARKETPLACE TRAFFIC IMPACT STUDY CONDUCTED 2005			CARSON MARKETPLACE RE-ANALYZED BASED ON 2017 CONDITIONS METHODOLOGY			THE DISTRICT RESULTS CONDUCTED 2017					
Trip Generation		IN	Out	Total [A]	IN	Out	Total [A]	AM Total	PM Total	Total			
AM		1,266	1,244	2,508	1,405	1,354	2,759	1,430	1,345	2,775			
PM		2,955	2,806	5,772	2,852	2,568	5,420	2,282	2,009	4,291			
ID	N/S Street Name	E/W Street Name	Jurisdiction	Significant Impact Before Mitigations	Significant and Unavoidable	Physical Mitigations [1]	Significant Impact Before Mitigations	Significant and Unavoidable [7]	Physical Mitigations [1]	Significant Impact Before Mitigations	Significant and Unavoidable [7]	Physical Mitigations [1]	Change in Impact/Mitigation
3	S Main St	I-405 SB On Ramp	City of Carson/Caltrans	No	-	No Impact No mitigation analyzed	Yes PM only	Yes	Add EBTL Remove EBL	Yes PM only	Yes	Add EBTL Remove EBL	Increase in PM peak hour background traffic by 15% since Carson Marketplace Study
5	S Vermont Ave	Del Amo Blvd	Los Angeles County/City of Los Angeles	Yes PM only	No	Add WBL	Yes AM and PM	Yes	Add WBL, NBT, NBR Remove NBTR	Yes AM and PM	Yes	Add WBL, NBT, NBR Remove NBTR	Difference in State of the Practice Methodology - impacts threshold is more sensitive under the District Analysis
6	Hamilton Ave	Del Amo Blvd	City of Los Angeles	Yes AM and PM	No	Add NBR	[2]	-	Signal warrant met under all analysis scenarios	[2]	-	Signal warrant met under all analysis scenarios	Difference in State of the Practice Methodology [2]
7	Figueroa St	Del Amo Blvd	City of Carson	Yes AM and PM	No	Add WBL, SBR, EBL, EBR	Yes AM and PM	Yes PM only	Add WBL, WBTR, SBL, EBTR, NBR Remove SBR, WBR, EBR	Yes AM and PM	Yes PM only	Add WBL, WBTR, SBL, EBTR, NBR Remove SBR, WBR, EBR	Increase in NBR, EBT, and SBL background traffic since Carson Marketplace Study; Incremental increases in V/C are lower for The District Project during both AM and PM peak periods
8	S Main St	E Del Amo Blvd	City of Carson	Yes PM only	No	Add WBL, SBR, EBL, NBL, NBR	Yes PM only	Yes PM only	Add WBL, SBT, EBT, EBR, NBR Remove EBTR	Yes PM only	Yes	Add WBL, SBT, EBT, EBR, NBR Remove EBTR	Increase in SBT and EBT background traffic since Carson Marketplace Study; Incremental increases in V/C are lower for The District Project during both AM and PM peak periods
10	S Avalon Blvd	E Del Amo Blvd	City of Carson	No	-	No Impact No mitigation analyzed	Yes AM and PM	Yes	Add SBR, NBL	Yes AM and PM	Yes	Add SBR, NBL	Overall increase in background traffic by over 20% since Carson Marketplace Study
11	Hamilton Ave	I-110 SB Ramps	Los Angeles County/Caltrans	Yes AM and PM	No	Add SBL Remove SBT	[2]	-	Signal warrant met under all analysis scenarios	[2]	-	Signal warrant met under all analysis scenarios	Difference in State of the Practice Methodology [2]
12	Figueroa St	I-110 NB Ramps	Los Angeles County/Caltrans	Yes AM and PM	Yes PM only	Add SBR, EBL, EBR Remove EBLR	Yes AM and PM	Yes PM only	Add SBTR, EBL, EBR Remove EBLR	Yes AM and PM	Yes	Add SBTR, EBL, EBR Remove EBLR	Difference in State of the Practice Methodology - impacts threshold is more sensitive under the District Analysis
15	Figueroa St	W Torrance Blvd	City of Carson	Yes PM only	No	Add SBL	Yes PM only	No	Add NBR	Yes [4] Future PM only	No	Add NBR	Decrease in SBL background traffic since Carson Marketplace Study; Carson Marketplace mitigation would require moving the median; The District mitigation proposed does not require moving the median
16	S Main St	W Torrance Blvd	City of Carson	Yes PM only	No	Add EBTL, EBR Remove EBL, EBTR	No	-	No Impact No mitigation analyzed	No	-	No Impact No mitigation analyzed	Similar background traffic, lower incremental increase in v/c associated with the District project compared to Carson Marketplace
20	S Main St	E 213th St	City of Carson	No	-	No Impact No mitigation analyzed	Yes PM only	No	Add WBL, WBR Remove WBLR	Yes PM only	No	Add WBL, WBR Remove WBLR	Increase in intersection LOS; The District has lower incremental increase in PM Peak Hour project v/c
22	S Vermont Ave	W Carson St	Los Angeles County	Yes AM and PM	No	Add WBTR, EBTR Remove WBR, EBR	Yes AM and PM	Yes	Add WBTR, EBTR Remove WBR, EBR	Yes AM and PM	Yes	Add WBTR, EBTR Remove WBR, EBR	Mitigation Identical to Carson Marketplace The District has lower incremental impact during both AM and PM peak hour
23	Figueroa St	W Carson St	City of Carson	Yes PM only	No	Add SBR	Yes [5]	No	Future Year Geometry [5] (Add SBL, EBT, EBR)	Yes [5]	No	Future Year Geometry [5] (Add SBL, EBT, EBR)	The District impact is a result of 2017 construction conditions Without construction (future year analysis) the District has no impact
24	S Main St	W Carson St	City of Carson	Yes PM only	No	Add WBL, SBTL, EBL Remove WBT, SBT, EBT	No	-	No Impact No mitigation analyzed	No	-	No Impact No mitigation analyzed	Overall decrease in background traffic by over 25% since Carson Marketplace Study
25	S Avalon Blvd	E Carson St	City of Carson	Yes PM only	Yes [3] PM only	Add WBR, SBR, EBR, NBR	Yes Existing PM Only Future AM and PM	Yes PM only (Existing and Future)	Add SBR, NBR Remove SBTR, NBTR	Yes AM and PM	No	Add SBR, NBR Remove SBTR, NBTR	Carson Marketplace mitigation not feasible due to required increase in ROW; Decrease in overall background traffic by approximately 20% since Carson Marketplace Study and lower increases in project related v/c result in less severe impacts
Total Significant Impact Count				12	2		11	8		11	7		

Notes

- [A] Total peak hour trips reported in Carson Marketplace TIS do not equal the sum of the in's and out's due to rounding error.
- [1] Indications of adding or removing relate to the existing conditions analyzed in the relevant study; Lane abbreviations are defined below:
 WBL - Westbound dedicated left turn lane SBL - Southbound dedicated left turn lane EBL - Eastbound dedicated left turn lane NBL - Northbound dedicated left turn lane
 WBT - Westbound dedicated through lane SBT - Southbound dedicated through lane EBT - Eastbound dedicated through lane NBT - Northbound dedicated through lane
 WBR - Westbound dedicated right turn lane SBR - Southbound dedicated right turn lane EBR - Eastbound dedicated right turn lane NBR - Northbound dedicated right turn lane
 WBTR - Westbound shared through/right lane SBTR - Southbound shared through/right lane EBTR - Eastbound shared through/right lane NBTR - Northbound shared through/right lane
 WBTL - Westbound shared through/left lane SBTL - Southbound shared through/left lane EBTL - Eastbound shared through/left lane NBTL - Northbound shared through/left lane
 WBLR - Westbound shared left/right lane SBLR - Southbound shared left/right lane EBLR - Eastbound shared left/right lane NBLR - Northbound shared left/right lane
- [2] Per the December 2016 City of Los Angeles Traffic Study Guidelines and the 2013 Los Angeles County Traffic Study Guidelines, unsignalized intersections within the City of Los Angeles and within Los Angeles County do not have impact criteria. As a result, unsignalized intersections are not included in the impact analysis. Per the relevant guidelines signal warrant analyses were conducted for the unsignalized intersections within the City of Los Angeles and the Los Angeles County.
- [3] Impact only fully mitigated with widening along all four approaches.
- [4] Impact only under cumulative plus project analysis; No impact under existing plus project analysis.
- [5] Impact only under existing plus project analysis; No impact under cumulative plus project analysis; Mitigation described is the reflects the post-construction condition.
- [6] Impact after mitigation only under existing plus project analysis; Impact fully mitigated under cumulative plus project analysis.
- [7] To be conservative, this transportation impact study assumes significant and unavoidable impacts at all significantly impacted intersections where any of the following are true:
 The mitigation does not fully mitigate the impact.
 The mitigation has a probability of being determined infeasible by a private entity or a public agency (other than City of Carson) having jurisdiction over components of the intersection.
 The mitigation was determined infeasible by the City of Carson based on policies around maintaining medians and promoting pedestrian safety and walkability.

**TABLE 16B
THE DISTRICT AT SOUTH BAY
REGIONAL CMP AND CALTRANS FREEWAY IMPACT COMPARISON**

		CARSON MARKETPLACE TRAFFIC IMPACT STUDY CONDUCTED 2005		THE DISTRICTS PRELIMINARY RESULTS CONDUCTED 2017		
		Impact on Capacity	Conclusion	Impact on Capacity	Conclusion	
CMP Transit Analysis		Project transit trips are approximately 25% of capacity	Project-related impacts to the regional transit system could be significant	Project transit trips are approximately 11% of capacity	Project-related impacts to the regional transit system could be significant	
CMP Arterial Analysis		Not conducted		No Significant Impacts		
ID	Route	Freeway Analysis Segment	Impact [1] AM	Impact [1] PM	Impact [1] AM	Impact [1] PM
7	I-110 NB	Between Sepulveda Blvd & Carson St	No	No	No	No
8	I-110 SB		No	No	No	Yes [2]
9	I-110 NB	Between Carson St & Torrance Blvd	No	No	No	Yes [2]
10	I-110 SB		No	Yes	No	No
11	I-110 NB	Between Torrance Blvd & I-405 Interchange	No	Yes	Yes	Yes
12	I-110 SB		No	Yes	No	Yes
13	I-110 NB	Between I-405 Interchange & SR-91 Interchange	No	No	Yes	No
14	I-110 SB		Yes	Yes	Yes	Yes
15	I-110 NB	Between SR-91 Interchange & Redondo Beach Blvd	No	No	No	No
16	I-110 SB		No	No	No	Yes [3]
19	I-405 NB	Between Alameda St & Wilmington Ave	No	No	No	No
20	I-405 SB		No	Yes	No	Yes [2]
21	I-405 NB	Between Wilmington Ave & Carson St	Yes	No	No	No
22	I-405 SB		Yes	Yes	No	Yes
23	I-405 NB	Between Carson St & Avalon Blvd	Yes	No	Yes	No
24	I-405 SB		No	Yes	No	Yes
25 [4]	I-405 NB	Between Avalon Blvd & I-110 Interchange	Yes	No	Yes [2] [No, 5]	No [Yes, 5]
26 [4]	I-405 SB		No	No	No [No, 5]	No [Yes, 5]
27	I-405 NB	Between I-110 Interchange & Vermont Ave	No	No	No	No
28	I-405 SB		No	No	Yes [2]	Yes
29	I-405 NB	Between Vermont Ave & Normandie Ave	No	No	No	No
30	I-405 SB		No	No	No	Yes
37	I-710 NB	Between I-405 Interchange & Del Amo Blvd	No	No	No	No
38	I-710 SB		No	No	Yes [3]	No
Total Impact Count [6]			5	7	7	13
ID	Route	Freeway Analysis Off-Ramp	Impact AM	Impact PM	Impact AM	Impact PM
2	I-405	Figueroa Street & I-405 northbound off-ramp		Not conducted	No	No
4	I-405	Main Street & I-405 northbound off-ramp		Not conducted	No	No
11	I-110	Hamilton Avenue & I-110 southbound ramps		Not conducted	No	No
12	I-110	Figueroa Street & I-110 northbound ramps		Not conducted	No	No
17/18 [7]	I-405	Avalon Boulevard/Lenardo Dr & I-405 SB ramps		Not conducted	No	No
19	I-405	Avalon Boulevard & I-405 northbound ramps		Not conducted	No	No
26	I-405	I-405 southbound ramps & Carson Street		Not conducted	No	No
27	I-405	I-405 northbound ramps & Carson Street		Not conducted	No	No
Total Impact Count			N/A	N/A	0	0

Notes

- [1] Impact methodology for freeway analysis differs
Carson Marketplace CMA Impact Criteria: Greater than 2% increase in v/c ratio at LOS F only
The Districts Caltrans Impact Criteria: Greater than 2% increase in v/c ratio at LOS F or a change in LOS with addition of project trips from LOS C to LOS D; from LOS D to LOS E; from LOS E to LOS F
- [2] Impact only under Existing Plus Project conditions
- [3] Impact only under Future Plus Project conditions
- [4] CMP Monitoring Station
- [5] Results of CMP Freeway Analysis showed in brackets
- [6] Implementation of additional freeway capacity to address significant impacts is beyond the ability of any individual project to implement and, as such, the project's incremental freeway impacts would be considered significant and unavoidable.
- [7] Intersection 18 serves as the control for the off-ramp in Existing and Future Base scenarios. Intersection 17 serves at the control for the off-ramp during the with project scenarios.

FREEWAY IMPACT ANALYSIS

The approved Project freeway impact analysis used CMP recommended methodology for all analyzed segments. The CMP methodology involved estimated volume over capacity ratios and had a criteria of significant impact if the approved project increased traffic by $\geq 2\%$ at LOS F or the approved project increased traffic by $\geq 2\%$ causing LOS F.

In the proposed modified Project freeway impact analysis, HCM 2010 analysis was conducted, which measures LOS based on three performance measures: density in terms of passenger cars per mile per lane, speed in terms of mean passenger-car speed, and V/C ratio. Each of these measures is an indication of how well the freeway is accommodating traffic flow. The measure used to provide an estimate of LOS is density. Based on the current Caltrans guidelines, significant impacts were identified for the following conditions:

- Project traffic is associated with a change in LOS from LOS C to LOS D
- Project traffic is associated with a change in LOS from LOS D to LOS E
- Project traffic is associated with a change in LOS from LOS E to LOS F
- Project traffic is associated with an increase in volume of $\geq 2\%$ at LOS F

Since both the freeway analysis methodology and measures of effectiveness have changed since the approved Project freeway impact analysis, the results are not directly comparable.

If the approved Project were to be analyzed using the HCM methodology and significant impact criteria described above, the impacts from the approved project on the freeway segments would be more severe in magnitude and number compared to the modified Project.

The freeway ramp queuing analysis was not conducted as part of the approved Project freeway impact analysis.

CONSTRUCTION IMPACT ANALYSIS

The approved Project transportation impact analysis did not include a construction impact analysis. The construction impact analysis conducted as part of the District at South Bay analysis identified potential temporary significant traffic impacts that are expected to be less than the number of significant impacts generated by the fully operational Project. Given the similar nature and scale of the approved Carson Marketplace project and the modified Project, it is expected that the construction impacts would be of similar scale and for a similar duration for both the approved and modified Projects.



THE MODIFIED PROJECT SUMMARY

The following summarizes the results of the modified Project transportation impact analysis:

- The modified Project consists of the construction of 1,250 residential units, 1,601,500 GBA sf (which is equal to 1,216,020 GLA square feet) of commercial retail space and includes 696,500 GBA sf (which is equal to 581,020 GLA square feet) of luxury outlet shops, 130,000 square feet of commercial recreation/entertainment space, 140,000 GLA (same as GBA) square feet of restaurant space, and 350 hotel rooms.
- The site on which the modified Project would be developed is comprised of approximately 157 acres located southwest of the San Diego Freeway (I-405) and north of the Avalon Boulevard Interchange. The modified Project proposes to provide signalized vehicular ingress and egress at three primary locations: Street "B" & Del Amo Boulevard, Street "A" & I-405 Southbound Ramps/Avalon Boulevard, and Main Street & Street "A".
- The modified Project is expected to generate approximately 57,218 daily trips, 2,775 trips during the AM peak hour, and 4,291 trips during the PM peak hour.
- The LOS analysis for the Existing plus Project scenario determined that the modified Project would result in significant impacts at 10 of the study intersections. The LOS analysis for the Future plus Project scenario determined that the modified Project would result in significant impacts at 10 of the study intersections.
- To be conservative, this transportation impact study assumes significant and unavoidable impacts at the seven significantly impacted intersections where the proposed mitigations either do not fully mitigate or have some probability of being infeasible. If any additional proposed mitigations were to be infeasible, impacts could remain significant and unavoidable.
- The projected level of additional transit riders generated by the proposed modified Project could result in a significant impact on public transit services in the vicinity of the modified Project. Proposed mitigations measures are expected to reduce the level of impact.
- The freeway analysis identified significant impacts at 10 freeway segments under the Existing plus Project analysis and eight freeway segments under the Future plus Project analysis. The freeway off-ramp queuing analysis identified no impacts associated with the proposed modified Project.
- The three main site access points of Street "A" at Main Street and Street "A" at the I-405 southbound ramps are projected to operate at LOS C or better with the modified Project according to the ICU LOS analysis. The stop-controlled project driveway is projected to operate at LOS C during the AM peak hour and LOS E during the PM peak hour.



- Peak construction activity was estimated to generate less daily, morning and evening peak hour traffic than estimated for Project operations. Therefore, traffic impacts related to Project construction activity were expected to be less than the impact under Project operations. Preparation and implementation of detailed a Construction Traffic Management Plan is recommended as mitigation of traffic impacts generated during the modified Project's construction activity.
- An alternative analysis estimated that the 25% reduction in the modified project would result in nine significant impacts during each the Existing and Future year analysis. The significant and unavoidable impacts identified as part of the alternative analysis are at the same seven intersections as identified for the modified Project. Significant impacts are also anticipated to the regional freeway and public transit system under the analyzed alternative.



REFERENCES

2010 Highway Capacity Manual, Transportation Research Board, 2010.

Carson Street Mixed-Use District Master Plan, City of Carson, June 2006

Enhancing Internal Trip Capture Estimation for Mixed-Use Developments NCHRP Report 684

Traffic Impact Analysis Report Guidelines, Los Angeles County Public Works, December 2013

Traffic Study Policies and Procedures, LADOT, August 2014.

Trip Generation, 9th Edition, ITE, 2012.

**APPENDIX A1:
METHODOLOGY MEMORANDUM**

FEHR & PEERS

MEMORANDUM

Date: July 6, 2017

To: Richard Garland, City of Carson
CC: Saied Naaseh and Ethan Edwards, City of Carson
Danielle Griffith, ESA

From: Cary Bearn and Anjum Bawa, Fehr & Peers

Subject: *The Boulevards Transportation Impact Study Methodology and Assumptions*

Ref: LA17-2934

This document summarizes the methodology and assumptions for the Transportation Impact Study (TIS) for The Boulevards Project in the City of Carson. It is intended to confirm the City's agreement with the methodology and assumptions at the outset of the analysis.

OVERALL METHODOLOGY

The impact of the proposed project will involve evaluating intersection level of service (LOS) for existing, existing with project, future base, and future with project during weekday AM and PM peak hour conditions.

Project impacts will be defined by comparing existing LOS to existing with project LOS and future base LOS to future with project LOS for weekday AM and PM peak periods. Specific LOS methodology and impact thresholds are defined below.

LOS Methodology

Study intersections will be analyzed according to the methodology of the appropriate jurisdiction. If an intersection lies along a jurisdictional border and the methodology differs by jurisdiction, both methodologies will be applied.

Signalized Study Intersection LOS Methodology

- City of Carson – Intersection Capacity Utilization (ICU)
- LA County - Intersection Capacity Utilization (ICU)
- City of Los Angeles – Critical Moves Analysis (CMA)

Unsignalized Study Intersection LOS Methodology

- City of Carson – Highway Capacity Manual (HCM) 2010 Analysis and CMA
- LA County - Signal Warrant Analysis
- City of Los Angeles – Signal Warrant Analysis

Impact Threshold

Impact thresholds will be applied according to the jurisdiction used to identify the LOS methodology:

Signalized Study Intersection

City of Carson: LOS E/F – V/C increase of 0.02 or more

LA County: Pre-project LOC C – V/C increase of 0.04 or more
Pre-project LOC D – V/C increase of 0.02 or more
Pre-project LOS E/F – V/C increase of 0.01 or more



City of Los Angeles: With project LOC C – V/C increase of 0.04 or more
 With project LOC D – V/C increase of 0.02 or more
 With project LOS E/F – V/C increase of 0.01 or more

Unsignalized Study Intersection

City of Carson: With project HCM LOS E/F (for any approach) – V/C increase of 0.02 or more

LA County: none – Signal Warrant Analysis Only

City of Los Angeles: none – Signal Warrant Analysis Only

EXISTING CONDITIONS

Description of existing transportation network

- Freeway and street characteristics within study area
- Pedestrian and bicycle infrastructure within ¼ mile of the project site
- Bicycle infrastructure within 2 miles of the project site
- Transit available within ¼ mile of the project site

Existing Traffic Volumes and LOS

Weekday and weekend turning movement counts were conducted the 24 existing study intersections on November 16, 2016 (Wednesday). The list of study intersections is included here and shown in Figure 1:

1. Figueroa St & SR 405 EB On Ramp
2. Figueroa St & SR 405 WB Off Ramp
3. S Main St & SR 405 EB On Ramp
4. S Main St & SR 405 WB Off Ramp
5. S Vermont Ave & Del Amo Blvd (**Border of City of LA and LA County**)
6. Hamilton Ave & Del Amo Blvd (**Border of City of LA and LA County**)
7. Figueroa St & Del Amo Blvd
8. S Main St & E Del Amo Blvd
9. Stamps Dr & Del Amo Blvd (**Future Intersection Only**)
10. S Avalon Blvd & E Del Amo Blvd
11. Hamilton Ave & SR 110 SB Ramps (**LA County**)
12. Figueroa St & SR 110 NB Ramps (**LA County**)
13. Main St & Lenardo Dr (**Future Intersection Only**)
14. Hamilton Ave & W Torrance Blvd
15. Figueroa St & W Torrance Blvd
16. S Main St & W Torrance Blvd
17. Lenardo Dr & I-405 SB Ramps (**Future Intersection Only**)
18. S Avalon Blvd & SR 405 EB Ramps
19. S Avalon Blvd & SR 405 WB Ramps
20. S Main St & E 213th St
21. S Avalon Blvd & E 213th St
22. S Vermont Ave & W Carson St (**LA County**)
23. Figueroa St & W Carson St
24. S Main St & W Carson St
25. S Avalon Blvd & E Carson St
26. SR 405 SB Ramps & E Carson St
27. SR 405 NB Ramps & E Carson St



FUTURE BASE CONDITIONS

The future base volumes will account for ambient growth and trips associated with related projects and will account for any planned network changes. Specific assumptions are listed below:

- Future Base Year – 2023
- Ambient linear growth factor – 0.5% per year (for a total of 3.5% over 7 years)
- Related Projects at least as current as June 16, 2017 (including any planned network improvements)
 - List of projects within the City of Carson
(<http://ci.carson.ca.us/CommunityDevelopment/devstatusreport.aspx>)
 - List of projects requested from the County of Los Angeles
 - List of projects requested from the City of Los Angeles

PROJECT DESCRIPTION

The Project as analyzed will include:

Outlet Shopping Center:	581,020 square feet (excluding 15,000 square foot restaurant)
Regional Retail:	575,000 square feet
Neighborhood Retail:	60,000 square feet
Restaurant Space:	140,000 square feet (includes restaurant at the outlet shopping center)
Movie Theater:	80,000 square feet (2,500 seats)
Multipurpose Recreational Facility:	25,000 square feet
Bowling Alley:	25,000 square feet
Hotel:	350 Rooms
Residential:	1,250 dwelling units

PROJECT TRIP GENERATION

The total trip generation of the project is based on ITE rates with credits for walk/bike/transit, internal capture, and pass-by informed by MXD+, NCHRP internal capture guidelines, ITE rates for pass-by credits, and City of Los Angeles rates for pass-by credits. Trip generation rates and credits are shown in Table 1.

TRIP DISTRIBUTION

The geographic trip distribution for original study was based on several factors including the type and density of the proposed land uses, the geographic distribution of population from which the patrons and employees of the project retail and commercial components may be drawn, and the location of the project access points in relation to the surrounding street system. The proposed project trip distribution patterns were developed according to the nature of the land use and the corresponding percentage of traffic likely to be regionally-oriented and using the freeway system as opposed to the local street system. These distributions were reviewed with regard to the updated project description and determined to be accurately represent the distribution patterns for the current project and existing street network.

Figures 2A, 2B, and 2C illustrate the distribution patterns for the regional commercial and hotel trips, for the neighborhood commercial, restaurants, and entertainment trips, and for the residential trips.



OTHER TRAFFIC STUDY COMPONENTS INCLUDED IN SCOPE OF WORK

- Congestion Management Plan (CMP) Analysis – Conduct CMP analysis required per the Los Angeles County CMP guidelines. The analysis will include:
 - Regional freeway analysis
 - CMP arterials analysis
 - Transit analysis
- Site Access Analysis – This analysis will involve a review of the Project's proposed access including an analysis of driveways and pedestrian entry points.
- Construction Traffic Impact Analysis – This analysis will involve preparing an estimate of construction related passenger car equivalent (PCE) trips and conducting a qualitative analysis of construction truck and worker trip impact on neighboring intersections. Potential issues to be considered include construction phasing, access routes for haul and delivery trucks, and construction worker parking.
- Mitigation Measures – The impacts of project traffic will be identified. If the project traffic creates significant impacts (according to City of Carson or/and Los Angeles County significant impact criteria), physical and/or operational improvements necessary to accommodate project trips will be investigated and defined at a conceptual level. Travel demand management/trip reduction strategies will be investigated. It cannot be known at this time whether the City will require the preparation of detailed mitigation drawings. If so, it would require an amendment to this scope and fee.

FREEWAY ANALYSIS INCLUDED IN SCOPE OF WORK

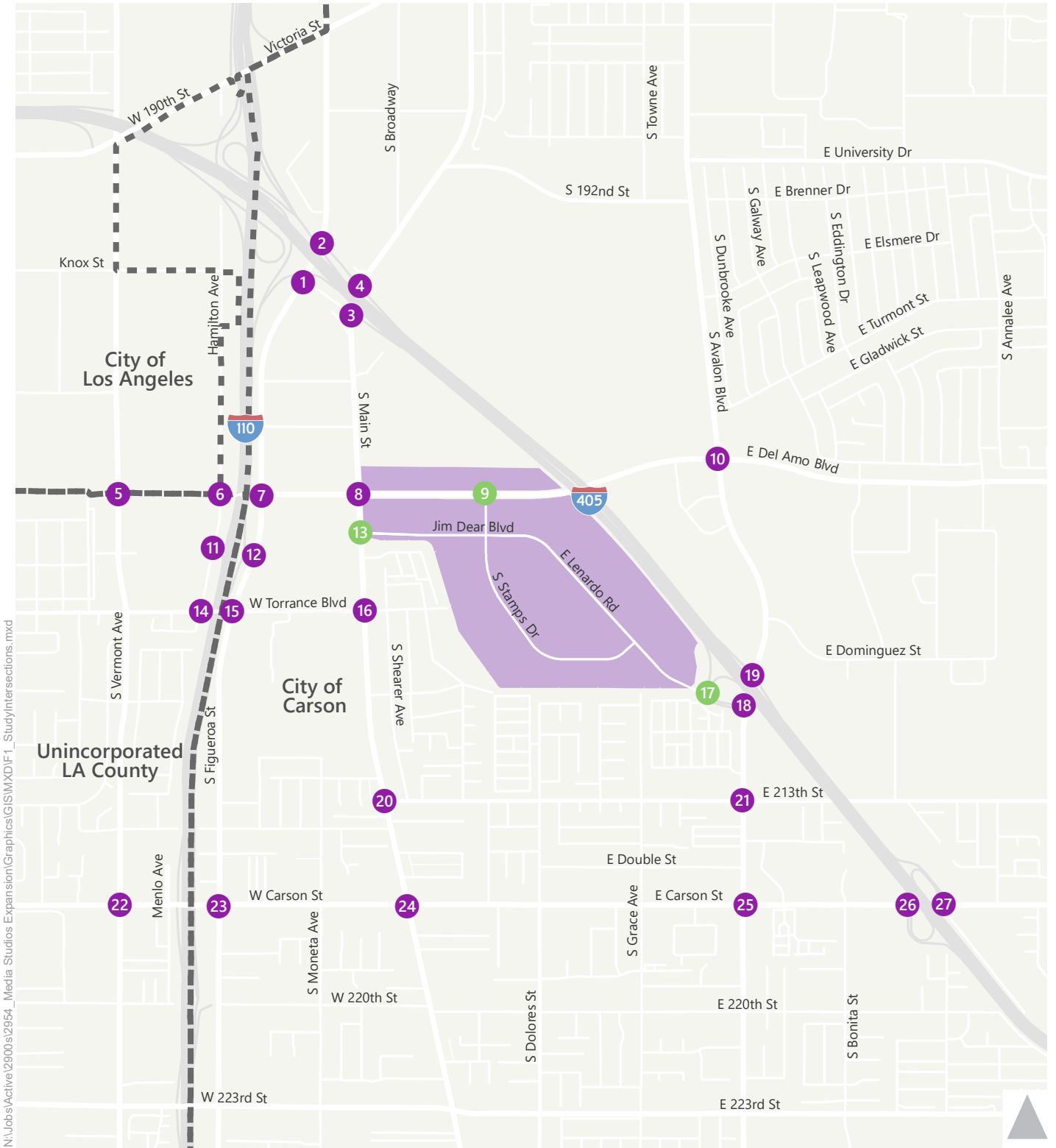
- Fehr & Peers will prepare for and attend one meeting with Caltrans District 7 staff to discuss the proposed changes to the original project.
- Fehr & Peers will negotiate the scope of the detailed freeway impact analysis which would include analysis of freeways segments and off-ramp locations. Caltrans requires use of Highway Capacity Manual methodology for both freeways segment and off-ramp queuing analysis.
- The original EIR looked at 32 freeways segments. Since only 7 of the 32 segments were identified to be significantly impacted, for the purpose of this study, we assume a total of 20 segments will be studied.
- The study assumes a total 10 off-ramp locations will be studied for freeway queuing analysis.
- Fehr & Peers will summarize the results of the analyses in technical memorandum and submit to team for review. Upon receipt of comments, we will revise the document and present the results of the analysis to Caltrans in an in-person meeting. This meeting will be used to discuss any potential mitigation measures.
- After agreement on the results of the analysis and any potential mitigation measures, the memorandum will be finalized and a final copy will be submitted to Caltrans.
- A total of two in-person meetings are assumed as part of the freeway analysis.

TABLE 1
PRELIMINARY TRIP GENERATION ESTIMATE
THE BOULEVARDS

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]									Estimated Trip Generation								
			Daily Rate	AM Peak Hour			PM Peak Hour			Trip Rate Unit	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips					
				Rate	% In	% Out	Rate	% In	% Out			In	Out	Total	In	Out	Total			
Shopping Center Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	820	635,000 ksf	[e] 1% 10% 10%	[e] 1% 10%	38% 1% 10%	[e] 1% 10%	48% 1% 10%	52% 1% 10%	per ksf	22,581 (226) (2,236) 20,119 (2,012) 18,107	298 (3) (30)	183 (2) (18)	481 (5) (48)	992 (10) (196)	1,075 (11) (213)	2,067 (21) (409)				
Factory Outlet Center Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	823	581,020 ksf	26.59 1% 10%	0.67 1% 10%	73% 1% 10%	27% 1% 10%	2.29 1% 10%	47% 1% 10%	53% 1% 10%	per ksf	15,449 (154) (1,530) 13,765 (1,377) 12,388	284 (3) (28) 253 (25) 228	105 (1) (10) 94 (9) 85	389 (4) (38) 347 (34) 313	626 (6) (124)	705 (7) (140)	1,331 (13) (264) 1,054 (106) 948			
Restaurant (High Turnover Sitdown) Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	932	140,000 ksf	127.15 1% 20%	10.81 1% 10%	55% 1% 10%	45% 1% 10%	9.85 1% 10%	60% 1% 10%	40% 1% 10%	per ksf	17,801 (178) (1,525) 14,098 (1,410) 12,688	832 (8) (82) 742 (74) 668	681 (7) (67) 607 (61) 546	1,513 (15) (149) 1,349 (135) 1,214	827 (8) (246)	552 (6) (164)	1,379 (14) (410) 955 (95) 860			
Multiplex Movie Theater Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	443/445 [f]	2,500 Seats 80,000 KSF	1.76 1% 10%	0.010 1% 10%	60% 1% 10%	40% 1% 10%	0.10 1% 10%	60% 1% 10%	40% 1% 10%	per seat	4,400 (44) (436) 3,920 (392) 3,528	15 0 (2)	10 0 (1)	25 0 (3)	150 (2)	100 (1)	250 (3) (25) 222 (22) 200			
Multipurpose Recreational Facility Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	435 [g]	25,000 KSF	59.67 1% 20%	1.181 1% 10%	80% 1% 10%	20% 1% 10%	3.58 1% 10%	55% 1% 10%	45% 1% 10%	per ksf	1,492 (15) (295) 1,182 (118) 1,064	24 0 0	6 0 0	30 0 0	50 (1) (10)	40 (1) (8)	90 (1) (18) 71 (7) 64			
Bowling Alley Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	437	25,000 KSF	33.33 1% 20%	3.130 1% 10%	60% 1% 10%	40% 1% 10%	3.54 1% 10%	55% 1% 10%	45% 1% 10%	per ksf	833 (8) (165) 660 (66) 594	47 0 0	31 0 0	78 0 0	49 (10)	40 (8)	89 (18) 71 (7) 64			
Hotel Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Net New Trips	310	350 rooms	8.17 1% 20%	0.53 1% 10%	59% 1% 10%	41% 1% 10%	0.60 1% 10%	51% 1% 10%	49% 1% 10%	per room	2,860 (29) (566) 2,265 2,265	110 (1) (11) 98 98	76 (1) (8) 67 67	186 (2) (19) 165 165	107 (1) (32) 74 74	103 (1) (31) 71 71	210 (2) (63) 145 145			
Residential Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Net New Trips	220	1,250 DU	6.65 1% 20%	0.51 1% 10%	20% 1% 10%	80% 1% 10%	0.62 1% 10%	65% 1% 10%	35% 1% 10%	per DU	8,313 (83) (1,646) 6,584 6,584	128 (1) (13) 114 114	510 (5) (51) 454 454	638 (6) (64) 568 568	504 (5) (150)	271 (3) (80)	775 (8) (230) 537 537			
Project Total Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Project Total Trips											73,729 (737) (10,399) 62,593 (5,375) 57,218	1,738 (16) (166) 1,556 (126) 1,430	1,602 (16) (155) 1,431 (86) 1,345	3,340 (32) (321) 2,987 (212) 2,775	3,305 (33) (783) 2,489 (207) 2,282	2,886 (29) (654) 2,203 (194) 2,009	6,191 (62) (1,437) 4,692 (401) 4,291			

Notes:

- Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, 2012, unless otherwise noted.
- A transit/walk/bike credit was developed based on the results of MXD 2.0 Mixed Use Trip Generation Methodology to account for transit, walking, and biking access to the project site.
- Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by MXD 2.0 Mixed Use Trip Generation Methodology, which incorporated the findings of NCHRP Project 8-51 as described in "Improved Estimation for Internal Trip Capture for Mixed-use Developments," ITE Journal, August 2010.
- A pass-by credits were informed by ITE pass-by rates and the City of Los Angeles Traffic Study Guideline Pass-by recommendations. Rates were considered reasonable given the location of the site along a major regional thoroughfare.
- ITE Shopping Center trip generation equations used rather than trip generation rate:
Daily: $\ln(T) = 0.65 * \ln(X) + 5.83$, where T = trips, X = area in ksf
AM Peak Hour: $\ln(T) = 0.61 * \ln(X) + 2.24$, where T = trips, X = area in ksf
PM Peak Hour: $\ln(T) = 0.67 * \ln(X) + 3.31$, where T = trips, X = area in ksf
- ITE rates for Multiplex Movie Theater (445) for Friday PM peak hour of adjacent streets were used for the PM Peak hour analysis
Multiplex Movie Theater rate not available for Daily or AM analysis, ITE rates for Movie Theater without Matinee (443) were used for Daily and AM
- Weekday daily and AM peak hour rates not available from ITE. Weekday PM peak hour trips assumed to be 6% of the weekday daily trips, and weekday AM peak hour trips assumed to be 33% of the weekday PM peak hour trips.



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Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries



Figure 1
Study Intersections



Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

↔ % Trip Distribution

Figure 2A

**Trip Distribution
Regional Commercial and Hotel**





Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

↔ Trip Distribution

Figure 2B

Trip Distribution Residential





Study Intersection

- Existing Intersection
- Future Intersection

- Project Site
- City Boundaries

↔ Trip Distribution

Figure 2C

**Trip Distribution
Neighborhood Commercial Entertainment & Restaurants**



APPENDIX A2:
CITY OF CARSON TRAFFIC ASSESSMENT FOR THE PROPOSED
MODIFIED PROJECT DISTRICT AT SOUTH BAY



Date: September 22, 2017

To: Saied Naaseh, Planning Manager

From: Richard Garland, Traffic Engineer
City of Carson

Subject: TRAFFIC ASSESSMENT FOR THE PROPOSED MODIFIED PROJECT DISTRICT AT SOUTH BAY

The City of Carson has completed its review of the traffic impact analysis prepared by Fehr and Peers for The District at South Bay Project (the modified Project or proposed modified Project).¹ This study was conducted as part of a subsequent environmental impact report (SEIR) being prepared for the proposed modified Project and compares the transportation impacts of the previously approved project to the impacts of the proposed modified Project. The original EIR was finalized and approved under the name of Carson Marketplace.

After a review of the pertinent data, the City of Carson has determined that the analysis conducted adequately describes the project-related impacts of the proposed development.

PROJECT DESCRIPTION

The proposed modified Project is within the City of Carson on a 157-acre site located southwest of the I-405 Freeway, northwest of the Avalon Boulevard interchange, and south of Del Amo Boulevard. The proposed modified Project proposes to provide signalized vehicular ingress and egress at three primary locations: Street "B" & Del Amo Boulevard, Street "A" & I-405 Southbound Ramps/Avalon Boulevard, and Main Street & Street "A".

TRIP GENERATION

The proposed modified Project is estimated to generate a net increase of 57,218 daily trips, a net increase of 2,775 AM peak hour trips and, a net increase of 4,291 PM peak hour trips. The trip generation estimates are based on formulas published by the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012.

¹ The District at South Bay Specific Plan regulates a 168-acre site, including the subject 157-acre former landfill site and 11 additional acres upon which a residential housing project is under development. The modified Project treats the 11-acre site (referred to as DD3) as a related project for purposes of CEQA.

TRAFFIC IMPACTS AND PHYSICAL MITIGATIONS

Traffic impact analysis was conducted at 27 study intersections surrounding the proposed project site. Based on the traffic impact criteria, the proposed modified Project would result in significant impacts at 11 intersections. A set of physical improvements and transportation demand management measures were proposed as mitigations to reduce project related impact at the intersections. The City has reviewed the proposed mitigations and identified feasible improvements at four significantly impacted intersections. The impact at the remaining seven intersections is determined to be significant and unavoidable as the improvements at these intersections were determined to be infeasible. The following discussion identifies each of the significantly impacted locations, the proposed physical improvements, and whether or not the improvements is feasible.

Intersection 3 – Main Street & I-405 Southbound On-Ramp

This intersection, located in the City of Carson at a Caltrans on-ramp, would be significantly impacted during the PM peak hour under the Existing year and Future year analysis. Conversion of the eastbound left-turn lane to a through/left-turn lane is proposed.

The proposed conceptual physical improvement has been reviewed by the City of Carson, however, Caltrans has jurisdiction over its ramp. Further coordination and detailed design review with Caltrans is needed to determine the feasibility of the improvement. If any component of the improvement were to be determined infeasible by Caltrans then the impact would remain significant and unavoidable.

To be conservative the City of Carson has rejected this mitigation due to the probability of Caltrans determining the physical mitigation to be infeasible. The City has determined the impact at Main Street & I-405 Southbound On-Ramp to be significant and unavoidable.

Intersection 5 – Vermont Avenue & Del Amo Boulevard

This intersection is located within Los Angeles County on the border with the City of Los Angeles and would be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvement is proposed:

- Addition of a second westbound left-turn lane
- Conversion of the northbound through/right-turn lane to a second northbound through and a dedicated right-turn lane. This would require the removal of approximately eight parking spaces.

To be conservative the City of Carson has rejected this mitigation due to the probability of Los Angeles County and or City of Los Angeles determining the physical mitigation to be infeasible. The City has determined the impact at Vermont Avenue & Del Amo Boulevard to be significant and unavoidable.

Intersection 7 – Figueroa Street & Del Amo Boulevard

This intersection is located within the City of Carson and would be significantly impacted during the AM and PM peak hour under the Existing Year and Future Year analysis. The following improvement is proposed:

- Addition of a second westbound left-turn lane
- Conversion of the westbound right-turn lane to a through/right lane
- Addition of a second southbound left-turn lane
- Conversion of the southbound through and southbound right lane to a through/right lane
- Conversion of the eastbound right-turn lane to a through/right lane
- Addition of a northbound right-turn only lane

The improvements are substantial and would require removing all median islands, restriping and realigning the intersection, and narrowing lanes widths to a minimum of 10 feet. The City of Carson has reviewed this potential mitigation and determined it to be in conflict with the Carson General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic purposes and to improve the quality of transportation corridors). The proposed mitigation is also in conflict with the Carson Master Plan of Bikeways (2013) which proposes buffered bike lanes along Figueroa Street north of Del Amo Boulevard, colored bike lanes along Figueroa Street south of Del Amo Boulevard, and buffered bike lanes along Del Amo Boulevard.

Both Figueroa Street and Del Amo Boulevard are also identified as Truck Routes within the City of Carson and the proposed mitigation reduces lane widths below the City standards set forth in the Carson Master Plan of Bikeways (12 foot minimums along Del Amo Boulevard and 11' foot minimums along Figueroa Street).

Due to inconsistencies with existing City plans and policies, the City of Carson has rejected the mitigation and the impact at the intersection would remain significant and unavoidable during both the AM and PM peak periods.

Intersection 8 – Main Street & Del Amo Boulevard

This intersection, located within the City of Carson, would be significantly impacted during the PM peak hour under the Existing year and Future year analysis. The following improvement is proposed:

- Addition of a second westbound left-turn lane
- Addition of a second southbound dedicated through lane
- Conversion of the eastbound through/right lane to a through lane and a right-turn lane
- Conversion of the northbound through/right lane to a through lane and a right-turn lane

These improvements would require acquisition of right-of-way from the undeveloped parcel on the northeast corner (currently under consideration for a residential project) to accommodate the additional westbound left-turn lane. The improvements would also require removal or narrowing of the existing median island (if right-of-way cannot be acquired), narrowing lanes to a minimum of 10 feet, and realigning the intersection to accommodate the proposed lane configurations.

The City of Carson has reviewed this potential improvement and determined it to be in conflict with the Carson General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic purposes and to improve the quality of transportation corridors) if right-of-way cannot be acquired to accommodate the proposed mitigation measures. The proposed mitigation is also inconsistent with the Carson Master Plan of Bikeways (2013), which proposes buffered bike lanes along both Del Amo Boulevard and Main Street, if additional right-of-way cannot be acquired.

Both Main Street and Del Amo Boulevard are also identified as Truck Routes within the City of Carson and the proposed mitigation would reduce lane widths below the City standards set forth in the Carson Master Plan of Bikeways (12 foot minimums along Del Amo Boulevard and 11 foot minimums along Main Street).

The City has determined the proposed improvement to be an acceptable mitigation of the significant traffic impact at this intersection under all scenarios if right-of-way can be acquired from the vacant parcel on the north side of Del Amo Boulevard east of Main Street. Due to inconsistencies with existing City plans and policies, the City of Carson will reject the mitigation if right-of-way on the northeast corner of the intersection cannot be acquired and the impact at the intersection would remain significant and unavoidable. The City and the applicant will continue conversations with the relevant property owner in an attempt to acquire the necessary right-of-way. However, given the probability that the additional right-of-way will not be acquired and that the proposed improvement is inconsistent with the City of Carson General

Plan and Carson Master Plan of Bikeways, the City has determined this improvement to be infeasible and has determined the impact to be significant and unavoidable.

Intersection 10 – Avalon Boulevard & Del Amo Boulevard

This intersection, located within the City of Carson, would be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvement is proposed:

- Conversion of the southbound through/right-lane to a through lane and a right-turn lane
- Addition of a second northbound left-turn lane

The improvements are conceptually feasible within the existing right-of-way but would require removing and reconstructing all median islands, restriping a bike lane to provide a southbound right-turn lane, and realigning the intersection approaches.

The City of Carson has reviewed this potential improvement and determined it to be in conflict with the Carson General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic purposes and to improve the quality of transportation corridors). The proposed mitigation is also in conflict with the Carson Master Plan of Bikeways (2013) which proposes buffered bike lanes along Avalon Boulevard north of Del Amo Boulevard that would be displaced by the proposed mitigation measure.

Due to inconsistencies with existing City's plans and policies, the City of Carson has rejected the mitigation and the impact would remain significant and unavoidable.

Intersection 12 – Figueroa Street & I-110 Northbound Ramps

This intersection, located within the City of Carson at Caltrans on/off-ramps, is determined to be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvement is proposed:

- Addition of a southbound through/right lane
- Addition of a third southbound receiving lane
- Conversion of the eastbound left/right lane to a dedicated left-turn lane and a dedicated right-turn lane

The improvements along the southbound approach would require a combination of partial widening on the west side of the north leg of the intersection along with modifying the median islands and restriping and realigning the lanes on both the north and south legs. An additional southbound receiving lane would also need to be added south of the intersection. The improvements along the eastbound approach would require reconfiguring and widening the Caltrans off-ramp.

The City of Carson has reviewed this potential improvement and determined it to be in conflict with the Carson Master Plan of Bikeways (2013) which proposes bike lanes along Figueroa Street. Furthermore, to be conservative, the City of Carson determined the addition of an eastbound lane within Caltrans right-of-way to be potentially infeasible due to the probability of Caltrans determining the physical improvement to be infeasible.

Due to inconsistencies with existing City plans and policies, the City of Carson has rejected the physical mitigation and the impact would remain significant and unavoidable.

Intersection 15 – Figueroa Street & Torrance Boulevard

This intersection, located within the City of Carson, would be significantly impacted during the Future year PM peak hour only. Conversion of the northbound through/right lane to a through lane and a right-turn lane is proposed.

The improvement is feasible within the existing right-of-way but would require restriping and the removal of approximately eight parking spaces. The City of Carson has reviewed the potential improvement and has determined it to be consistent with existing plans and policies and that the removal of parking to provide the right-turn lane would not result in an adverse effect.

The City has determined the proposed improvement to be an acceptable mitigation for significant traffic impact at the intersection under all scenarios.

Intersection 20 – Main Street & 213th Street

This intersection, located within the City of Carson, would be significantly impacted during the Existing year and Future year PM peak hour only. Conversion of the westbound left/right lane to a left-turn lane and a right-turn lane is proposed.

The improvement is feasible within the existing right-of-way but would require restriping and the removal of approximately eight parking spaces. The City of Carson has reviewed the potential mitigation and has determined it to be consistent with existing plans and policies and that the removal of parking to provide the right-turn lane would not result in an adverse effect.

The City has determined the proposed improvement to be an acceptable mitigation for the significant traffic impact at the intersection under all scenarios.

Intersection 22 – Vermont Avenue & Carson Street

This intersection is located within Los Angeles County and would be significantly impacted during the AM and PM peak hours under the Existing year and Future year analysis. The following improvements are proposed:

- Conversion of the westbound right-turn lane to a through/right lane
- Conversion of the eastbound right-turn lane to a through/right lane

The improvement is feasible within the existing right-of-way but would require restriping and the addition of a receiving lane in the westbound direction. Parking would need to be removed along Carson Street to provide a third through lane in the eastbound and westbound directions to create a consistent configuration along the corridor.

Los Angeles County has indicated that removal of on-street parking is not acceptable because of the impacts to commercial uses at this location. Within the City of Carson, Carson Street is currently being redesigned per the Carson Street Mixed-Use District Master Plan to provide two lanes in each direction with curb extensions, sharrow² pavement markings and a center median island. The City of Carson has reviewed this potential improvement and determined it to be in conflict with the General Plan (including but not limited to LU-13.1 and TI-7.1-4 which prioritize the continued use of landscaped medians to aesthetic

² Shared Lane Markings (SLMs), or “sharrows,” are road markings used to indicate a shared lane environment for bicycles and automobiles. Among other benefits shared lane markings reinforce the legitimacy of bicycle traffic on the street, recommend proper bicyclist positioning, and may be configured to offer directional and wayfinding guidance. National Association of City Transportation Officials (NACTO) – Urban Bikeway Design Guide.

purposed and to improve the quality of transportation corridors) as well as the Carson Street Mixed-Use District Master Plan, which is currently being implemented along Carson Street.

The City of Carson, with consultation from Los Angeles County, has rejected the mitigation and the impact at this intersection would remain significant and unavoidable.

Intersection 23 – Figueroa Street & Carson Street

This intersection, located within the City of Carson, would be significantly impacted during the AM and PM peak periods during existing conditions due to ongoing current construction conditions/activities only. The current construction is anticipated to be completed later this year (2017) which will be before the project construction commences for the proposed modified Project. This is a temporary impact due to ongoing construction by the City and once completed, the existing intersection geometry will be returned which fully accommodates Future year traffic/proposed modified Project buildout.

Intersection 25 – Avalon Boulevard & Carson Street

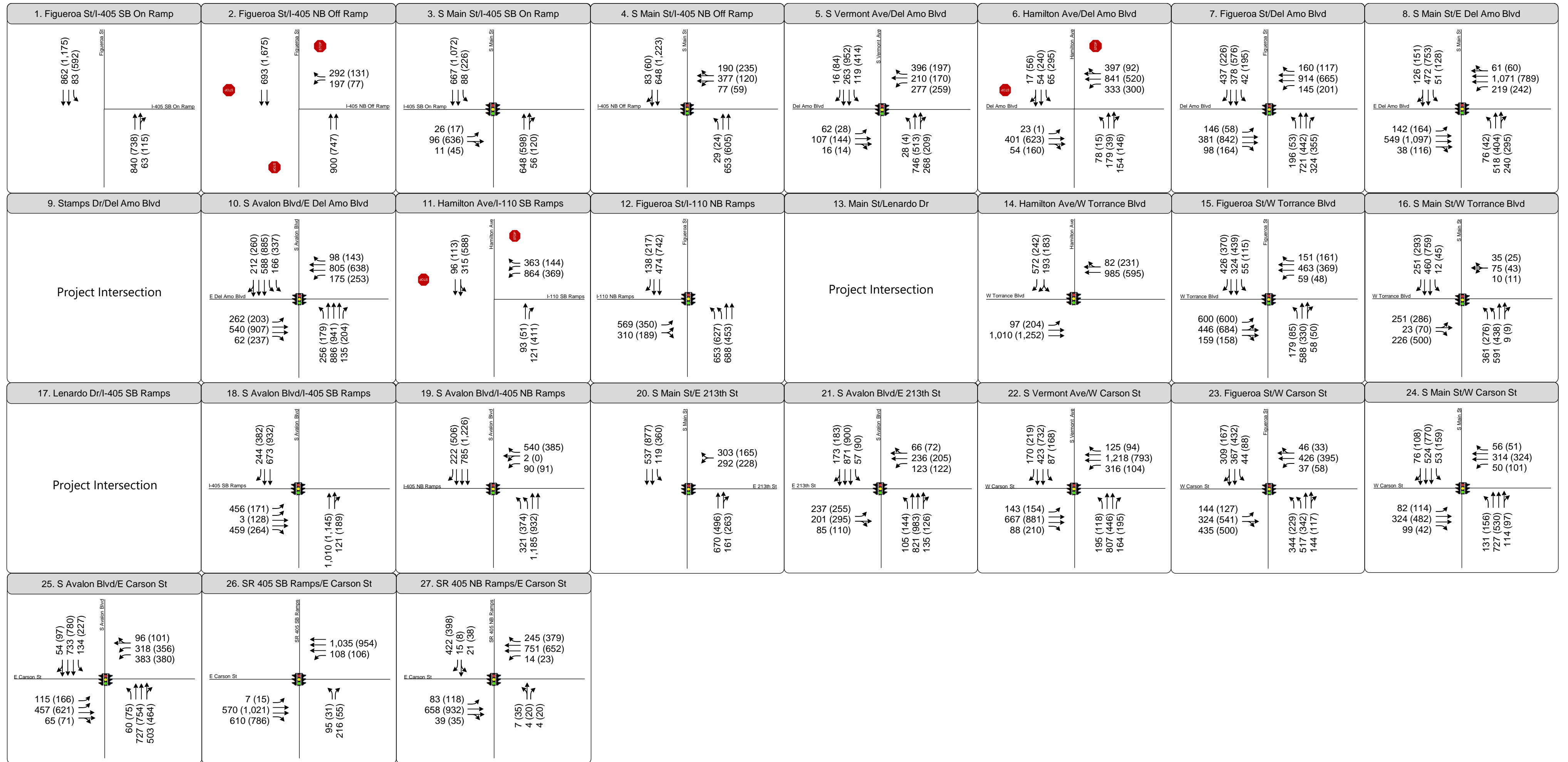
This intersection, located within the City of Carson, would be significantly impacted during the existing year analysis in the PM peak hour and during the Future year analysis in both the AM and PM peak hour. The following improvements are proposed:

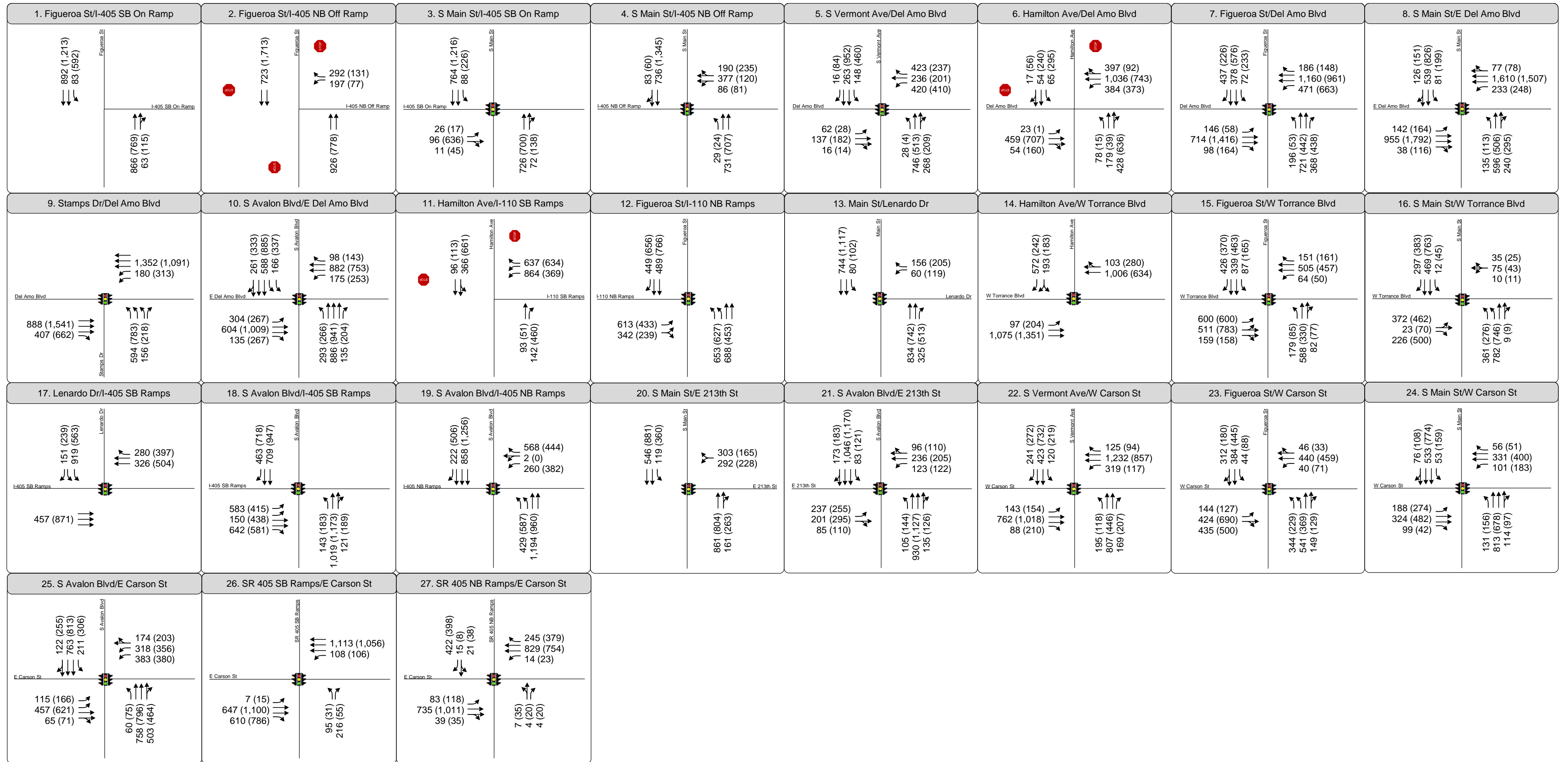
- Convert the southbound through/right lane to a dedicated right-turn lane
- Convert the northbound through/right lane to a dedicated right-turn lane

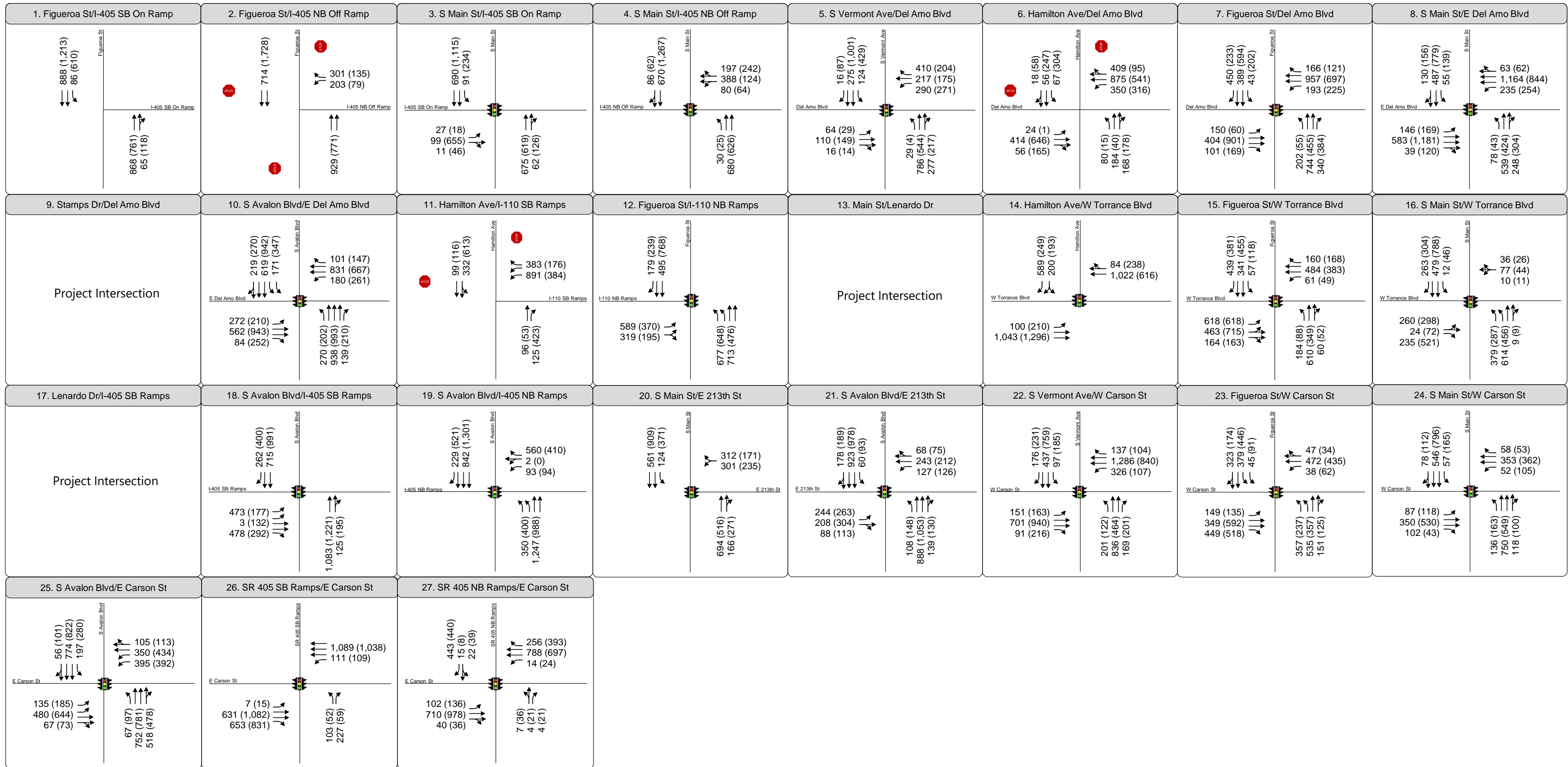
The improvement is feasible within the existing right-of-way and would require restriping the northbound and southbound right-turn lanes and restriping the three receiving lanes to provide only two receiving lanes. These proposed improvements fully mitigate the significant impact at this intersection under all scenarios.

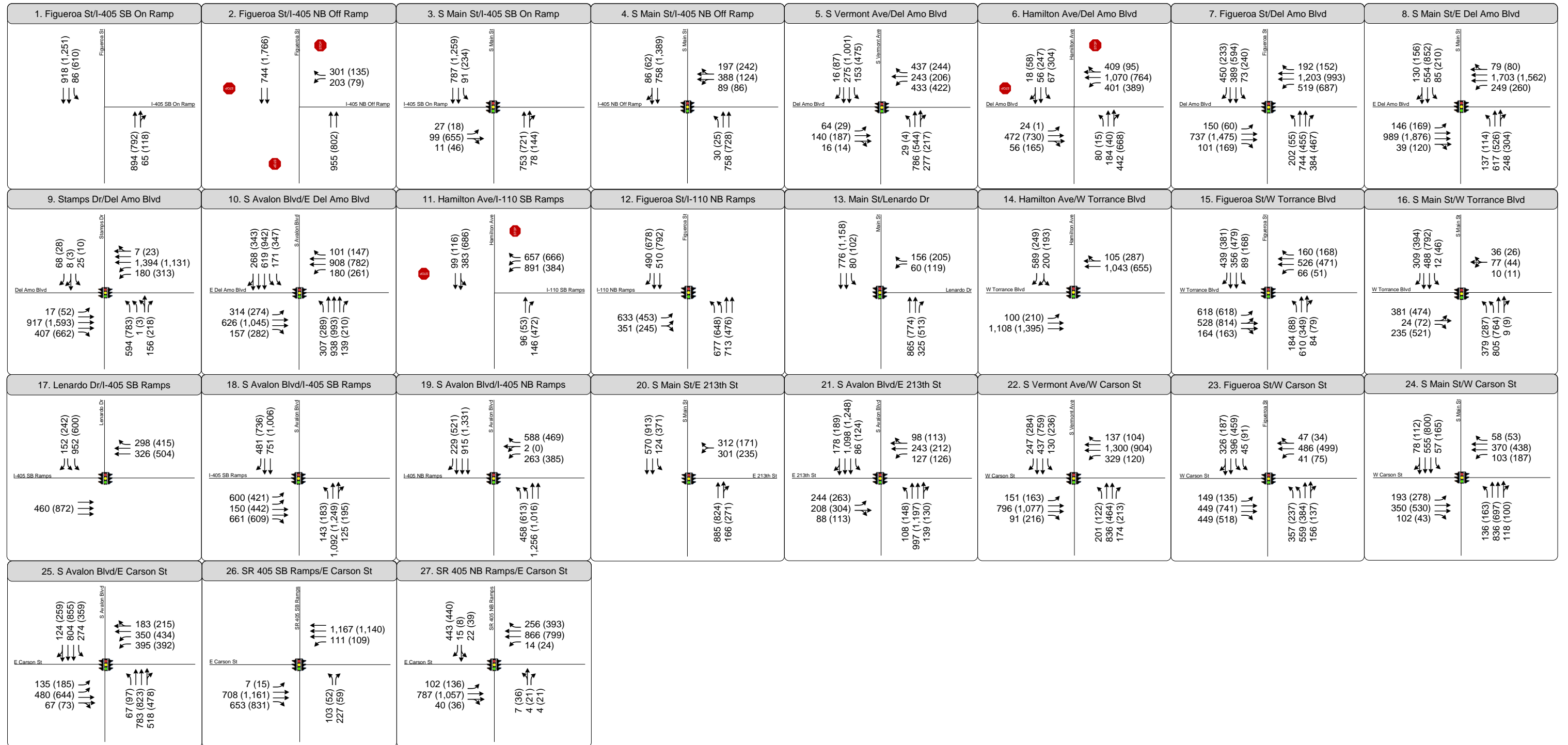
The City of Carson has reviewed the potential improvements and has determined it to be consistent with existing plans and policies. The City has determined the proposed improvements to be an acceptable mitigation of the significant traffic impact at this intersection under all scenarios.

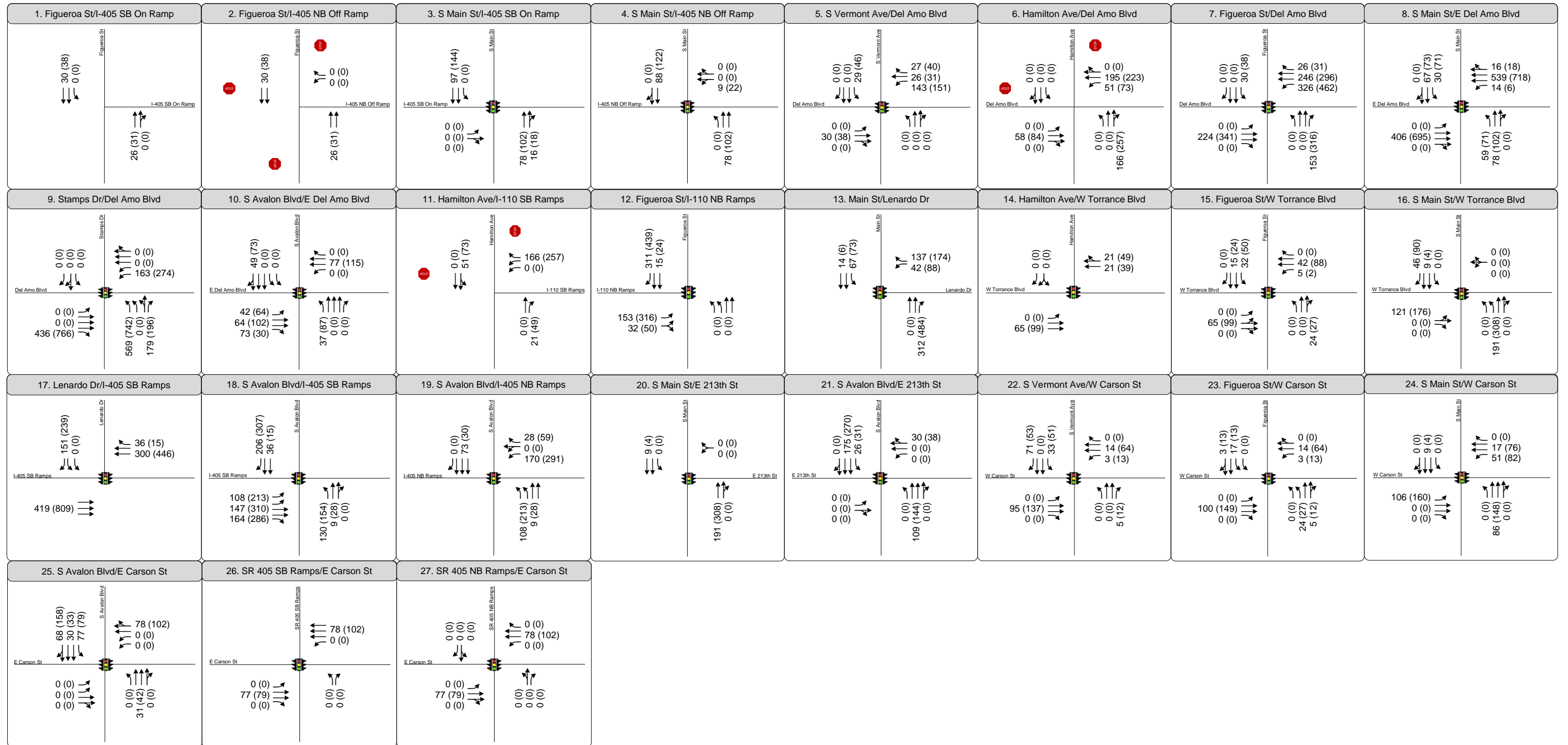
APPENDIX B:
LANE CONFIGURATIONS AND TRAFFIC VOLUMES

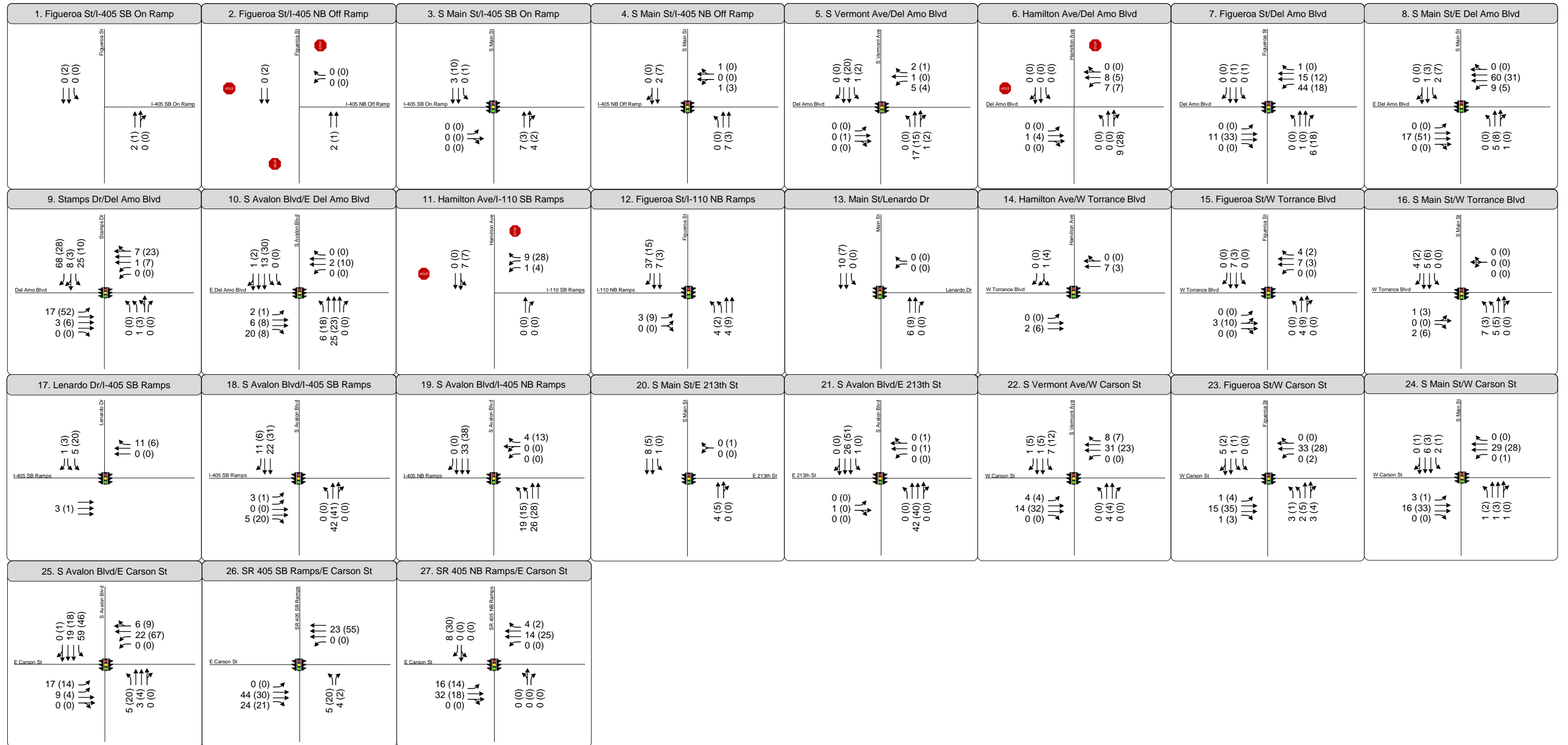












1. Figueroa St/I-405 SB On Ramp	2. Figueroa St/I-405 NB Off Ramp	3. S Main St/I-405 SB On Ramp	4. S Main St/I-405 NB Off Ramp	5. S Vermont Ave/Del Amo Blvd	6. Hamilton Ave/Del Amo Blvd	7. Figueroa St/Del Amo Blvd	8. S Main St/E Del Amo Blvd
9. Stamps Dr/Del Amo Blvd	10. S Avalon Blvd/E Del Amo Blvd	11. Hamilton Ave/I-110 SB Ramps	12. Figueroa St/I-110 NB Ramps	13. Main St/Lenardo Dr	14. Hamilton Ave/W Torrance Blvd	15. Figueroa St/W Torrance Blvd	16. S Main St/W Torrance Blvd
17. Lenardo Dr/I-405 SB Ramps	18. S Avalon Blvd/I-405 SB Ramps	19. S Avalon Blvd/I-405 NB Ramps	20. S Main St/E 213th St	21. S Avalon Blvd/E 213th St	22. S Vermont Ave/W Carson St	23. Figueroa St/W Carson St	24. S Main St/W Carson St
25. S Avalon Blvd/E Carson St	26. SR 405 SB Ramps/E Carson St	27. SR 405 NB Ramps/E Carson St					

**APPENDIX C:
COUNT SHEETS**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-001

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	Figueroa St			Figueroa St			SR 405 EB On Ramp			SR 405 EB On Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	0	204	6	11	157	0	0	0	0	0	0	0	378
7:15 AM	0	175	10	19	198	0	0	0	0	0	0	0	402
7:30 AM	0	215	16	20	266	0	0	0	0	0	0	0	517
7:45 AM	0	218	20	17	215	0	0	0	0	0	0	0	470
8:00 AM	0	228	17	27	179	0	0	0	0	0	0	0	451
8:15 AM	0	221	14	17	148	0	0	0	0	0	0	0	400
8:30 AM	0	182	17	18	134	0	0	0	0	0	0	0	351
8:45 AM	0	166	7	23	132	0	0	0	0	0	0	0	328
9:00 AM	0	132	19	11	99	0	0	0	0	0	0	0	261
9:15 AM	0	143	10	7	116	0	0	0	0	0	0	0	276
9:30 AM	0	142	7	18	100	0	0	0	0	0	0	0	267
9:45 AM	0	112	13	22	100	0	0	0	0	0	0	0	247
TOTAL VOLUMES :	0	2138	156	210	1844	0	0	0	0	0	0	0	4348
APPROACH %'s :	0.00%	93.20%	6.80%	10.22%	89.78%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	836	63	83	858	0	0	0	0	0	0	0	1840
PEAK HR FACTOR :	0.917			0.823			0.000			0.000			0.890

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
2	0	0	0
1	0	0	0
0	0	0	0
2	0	0	0
1	0	0	0
0	11	0	0

CONTROL : No Control

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-002

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	0	2	0	0	2	0	0	0	0	1	0	1	
7:00 AM	0	194	0	0	140	0	0	0	0	27	0	65	426
7:15 AM	0	175	0	0	172	0	0	0	0	36	0	60	443
7:30 AM	0	211	0	0	233	0	0	0	0	63	0	65	572
7:45 AM	0	230	0	0	167	0	0	0	0	57	0	74	528
8:00 AM	0	224	0	0	174	0	0	0	0	42	0	75	515
8:15 AM	0	231	0	0	116	0	0	0	0	34	0	77	458
8:30 AM	0	186	0	0	135	0	0	0	0	31	0	55	407
8:45 AM	0	161	0	0	118	0	0	0	0	23	0	56	358
9:00 AM	0	141	0	0	105	0	0	0	0	25	0	61	332
9:15 AM	0	133	0	0	76	0	0	0	0	26	0	53	288
9:30 AM	0	140	0	0	90	0	0	0	0	20	0	43	293
9:45 AM	0	114	0	0	108	0	0	0	0	22	0	32	276
TOTAL VOLUMES :	0	2140	0	0	1634	0	0	0	0	406	0	716	4896
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	36.19%	0.00%	63.81%	
PEAK HR START TIME :	730 AM												
PEAK HR VOL :	0	896	0	0	690	0	0	0	0	196	0	291	2073
PEAK HR FACTOR :	0.970												
	0.740			0.000			0.929						0.906

UTURNS			
NB	SB	EB	WB
0	0	0	0

NB	SB	EB	WB
0	0	0	0

CONTROL : 1-Way Stop (WB)

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-003

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Main St			S Main St			SR 405 EB On Ramp			SR 405 EB On Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1.5	0.5	1	2	0	1	0.5	0.5	0	0	0	
7:00 AM	0	120	10	28	134	0	1	18	0	0	0	0	311
7:15 AM	0	142	16	25	160	0	6	27	3	0	0	0	379
7:30 AM	1	148	11	14	198	0	6	20	4	0	0	0	402
7:45 AM	1	221	14	30	181	0	8	25	1	0	0	0	481
8:00 AM	0	134	15	19	125	0	6	24	3	0	0	0	326
8:15 AM	0	140	13	27	150	0	5	22	1	0	0	0	358
8:30 AM	0	106	14	15	80	0	5	22	1	0	0	0	243
8:45 AM	1	104	13	15	89	0	2	22	6	0	0	0	252
9:00 AM	1	78	8	31	76	0	6	18	2	0	0	0	220
9:15 AM	0	74	9	25	66	0	2	20	1	0	0	0	197
9:30 AM	0	67	9	23	76	0	2	24	0	0	0	0	201
9:45 AM	1	65	11	11	67	0	5	25	4	0	0	0	189
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	5	1399	143	263	1402	0	54	267	26	0	0	0	3559
	0.32%	90.43%	9.24%	15.80%	84.20%	0.00%	15.56%	76.95%	7.49%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	645	56	88	664	0	26	96	11	0	0	0	1588
PEAK HR FACTOR :	0.745												0.825
				0.887			0.924			0.000			

UTURNS			
NB	SB	EB	WB
0	0		
0	1		
1	0		
1	1		
0	0		
0	0		
0	1		
1	0		
1	1		
0	1		
0	0		
1	0		

NB	SB	EB	WB
5	5	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-004

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL			
	S Main St			S Main St			SR 405 WB Off Ramp			SR 405 WB Off Ramp						
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND						
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
	1	2	0	0	1.5	0.5	0	0	0	0	2	0				
7:00 AM	4	120	0	0	143	14	0	0	0	16	79	30	406			
7:15 AM	6	134	0	0	169	24	0	0	0	20	64	30	447			
7:30 AM	9	144	0	0	197	37	0	0	0	12	87	40	526			
7:45 AM	8	212	0	0	172	23	0	0	0	25	97	52	589			
8:00 AM	6	138	0	0	137	12	0	0	0	20	101	52	466			
8:15 AM	6	156	0	0	139	11	0	0	0	20	90	45	467			
8:30 AM	7	103	0	0	98	7	0	0	0	13	67	44	339			
8:45 AM	1	95	0	0	98	11	0	0	0	11	66	49	331			
9:00 AM	4	87	0	0	90	6	0	0	0	16	75	45	323			
9:15 AM	5	68	0	0	82	11	0	0	0	15	64	31	276			
9:30 AM	3	70	0	0	78	7	0	0	0	14	54	32	258			
9:45 AM	2	64	0	0	78	8	0	0	0	11	40	36	239			
TOTAL VOLUMES :	61	1391	0	0	1481	171	0	0	0	193	884	486	4667			
APPROACH %'s :	4.20%	95.80%	0.00%	0.00%	89.65%	10.35%	#DIV/0!	#DIV/0!	#DIV/0!	12.35%	56.56%	31.09%				
PEAK HR START TIME :	730 AM												TOTAL			
PEAK HR VOL :	29	650	0	0	645	83	0	0	0	77	375	189	2048			
PEAK HR FACTOR :	0.772												0.778	0.000	0.921	0.869

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-004

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Main St			S Main St			SR 405 WB Off Ramp			SR 405 WB Off Ramp			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	2	0	0	1.5	0.5	0	0	0	0	2	0	
4:00 PM	4	135	0	0	230	18	0	0	0	14	28	40	469
4:15 PM	4	125	0	0	247	19	0	0	0	15	24	55	489
4:30 PM	3	141	0	1	329	15	0	0	0	17	37	36	579
4:45 PM	6	169	0	1	274	12	0	0	0	18	30	38	548
5:00 PM	4	124	0	0	315	15	0	0	0	18	20	52	548
5:15 PM	5	155	0	0	334	18	0	0	0	11	35	67	625
5:30 PM	9	154	0	0	294	15	0	0	0	12	34	77	595
5:45 PM	3	132	0	0	278	23	0	0	0	22	30	51	539
6:00 PM	7	102	0	0	247	9	0	0	0	12	32	34	443
6:15 PM	3	118	0	0	243	10	0	0	0	12	31	45	462
6:30 PM	3	92	0	0	224	9	0	0	0	17	24	28	397
6:45 PM	4	91	0	0	181	9	0	0	0	16	10	18	329
TOTAL VOLUMES :	55	1538	0	2	3196	172	0	0	0	184	335	541	6023
APPROACH %'s :	3.45%	96.55%	0.00%	0.06%	94.84%	5.10%	#DIV/0!	#DIV/0!	#DIV/0!	17.36%	31.60%	51.04%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	24	602	0	1	1217	60	0	0	0	59	119	234	2316
PEAK HR FACTOR :	0.894												0.926

UTURNS			
NB	SB	EB	WB
1	0		
0	0		
0	1		
0	1		
1	0		
1	0		
1	0		
0	0		
0	0		
0	0		
0	0		
1	0		

NB	SB	EB	WB
5	2	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-005

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Vermont Ave			S Vermont Ave			Del Amo Blvd			Del Amo Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	2	194	31	19	106	3	5	16	3	48	26	56	509
7:15 AM	0	184	48	19	79	5	11	19	2	68	35	84	554
7:30 AM	4	190	68	31	63	3	11	28	2	74	67	83	624
7:45 AM	6	186	71	25	68	4	16	36	8	74	48	123	665
8:00 AM	15	190	72	35	58	4	19	24	4	61	40	92	614
8:15 AM	3	176	56	27	73	5	16	18	2	67	54	96	593
8:30 AM	0	150	49	33	62	3	5	19	1	50	38	89	499
8:45 AM	0	155	28	31	51	7	9	8	1	53	36	114	493
9:00 AM	3	108	27	28	63	4	8	12	2	47	28	70	400
9:15 AM	1	106	33	26	61	6	3	7	1	43	15	54	356
9:30 AM	2	103	26	36	59	2	5	10	3	45	18	47	356
9:45 AM	3	100	37	31	56	0	6	6	0	35	17	53	344
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	39	1842	546	341	799	46	114	203	29	665	422	961	6007
	1.61%	75.90%	22.50%	28.75%	67.37%	3.88%	32.95%	58.67%	8.38%	32.47%	20.61%	46.92%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	28	742	267	118	262	16	62	106	16	276	209	394	2496
PEAK HR FACTOR :	0.936												0.938

UTURNS			
NB	SB	EB	WB
0	0		0
0	0		0
0	0		0
0	1		0
0	1		0
0	0		0
0	0		0
0	0		0
0	0		0
0	0		0
0	0		0
1	0		0
0	0		1
NB	SB	EB	WB
1	2	0	1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-005

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL			
	S Vermont Ave			S Vermont Ave			Del Amo Blvd			Del Amo Blvd						
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND						
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
4:00 PM	2	142	47	85	192	12	7	23	2	55	33	28	628			
4:15 PM	3	138	46	88	183	20	1	19	4	63	30	49	644			
4:30 PM	0	140	63	97	187	15	7	25	3	66	28	42	673			
4:45 PM	1	136	65	100	211	24	10	30	4	56	32	44	713			
5:00 PM	2	132	51	118	275	17	6	36	3	63	42	30	775			
5:15 PM	1	116	37	103	230	27	7	33	4	70	50	50	728			
5:30 PM	0	126	55	91	231	16	5	44	3	69	45	72	757			
5:45 PM	3	105	43	107	230	13	8	36	4	55	44	38	686			
6:00 PM	3	103	45	111	212	21	1	24	3	57	40	39	659			
6:15 PM	1	99	51	88	201	13	4	18	1	43	28	48	595			
6:30 PM	1	68	36	80	158	14	2	9	1	44	21	26	460			
6:45 PM	0	69	24	47	157	17	2	7	1	50	16	32	422			
TOTAL VOLUMES :	17	1374	563	1115	2467	209	60	304	33	691	409	498	7740			
APPROACH %'s :	0.87%	70.32%	28.81%	29.41%	65.08%	5.51%	15.11%	76.57%	8.31%	43.24%	25.59%	31.16%				
PEAK HR START TIME :	445 PM												TOTAL			
PEAK HR VOL :	4	510	208	412	947	84	28	143	14	258	169	196	2973			
PEAK HR FACTOR :	0.894												0.880	0.889	0.837	0.959

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
2	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	1
0	0	0	1

NB	SB	EB	WB
0	2	0	2

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-006

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	Hamilton Ave			Hamilton Ave			Del Amo Blvd			Del Amo Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 2	ER 0	WL 1	WT 2	WR 0	
7:00 AM	13	41	27	9	2	3	4	44	14	89	135	55	436
7:15 AM	40	45	38	19	15	3	6	66	13	95	165	78	583
7:30 AM	13	25	28	23	23	9	3	101	17	98	222	80	642
7:45 AM	26	37	50	12	11	4	3	109	8	75	232	120	687
8:00 AM	20	66	43	20	10	1	12	99	19	76	193	110	669
8:15 AM	19	50	32	10	10	3	5	90	10	82	190	85	586
8:30 AM	19	52	38	15	13	6	10	80	11	82	164	79	569
8:45 AM	33	51	30	37	9	15	8	52	16	78	157	64	550
9:00 AM	17	36	29	19	14	8	12	49	6	77	129	43	439
9:15 AM	11	45	35	20	17	4	5	48	10	69	100	40	404
9:30 AM	6	42	38	17	15	5	4	50	18	58	97	31	381
9:45 AM	11	39	38	23	18	9	7	59	16	53	85	45	403
TOTAL VOLUMES :	228	529	426	224	157	70	79	847	158	932	1869	830	6349
APPROACH %'s :	19.27%	44.72%	36.01%	49.67%	34.81%	15.52%	7.29%	78.14%	14.58%	25.67%	51.47%	22.86%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	78	178	153	65	54	17	23	399	54	331	837	395	2584
PEAK HR FACTOR :	0.793												0.940

UTURNS			
NB	SB	EB	WB
		0	0
		0	1
		1	0
		0	0
		0	0
		0	0
		0	0
		0	0
		0	0
		0	0
		0	0
		0	0
		0	0
		0	0
		0	0
NB	SB	EB	WB
0	0	1	1

CONTROL : 4-Way Stop

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-007

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	Figueroa St			Figueroa St			Del Amo Blvd			Del Amo Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	
7:00 AM	26	144	67	4	38	53	23	47	12	40	190	41	685
7:15 AM	36	140	70	8	73	76	26	82	19	42	244	45	861
7:30 AM	31	159	75	9	103	130	29	95	25	49	227	60	992
7:45 AM	67	178	87	10	121	126	35	107	27	27	236	40	1061
8:00 AM	47	205	79	14	85	101	48	103	22	36	213	36	989
8:15 AM	50	175	81	9	67	78	33	74	24	32	233	23	879
8:30 AM	50	138	71	8	82	82	27	86	24	20	198	30	816
8:45 AM	35	118	61	9	50	58	32	56	30	24	189	16	678
9:00 AM	30	103	55	7	53	65	26	49	23	21	167	20	619
9:15 AM	26	78	54	12	50	42	13	66	25	14	142	17	539
9:30 AM	36	104	41	12	51	43	27	50	30	18	105	15	532
9:45 AM	30	97	53	6	39	51	12	72	32	16	93	20	521
TOTAL VOLUMES :	464	1639	794	108	812	905	331	887	293	339	2237	363	9172
APPROACH %'s :	16.02%	56.58%	27.41%	5.92%	44.49%	49.59%	21.91%	58.70%	19.39%	11.53%	76.11%	12.35%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	195	717	322	42	376	435	145	379	98	144	909	159	3921
PEAK HR FACTOR :	0.929												0.924

UTURNS			
NB	SB	EB	WB
0	0		
1	0		
0	0		
0	0		
0	0		
0	0		
0	0		
0	0		
0	0		
0	0		
0	0		
0	0		
0	0		
0	0		
1	0		
NB	SB	EB	WB
2	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-007

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	Figueroa St			Figueroa St			Del Amo Blvd			Del Amo Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 0	WL 1	WT 2	WR 1	
4:00 PM	14	122	69	40	110	67	14	192	39	28	101	22	818
4:15 PM	18	108	80	44	123	37	20	155	35	44	182	19	865
4:30 PM	13	107	79	26	116	56	13	177	52	39	131	22	831
4:45 PM	15	125	91	42	127	60	14	202	32	31	144	29	912
5:00 PM	9	98	77	57	161	59	11	206	50	35	133	21	917
5:15 PM	13	114	96	50	159	49	6	205	46	81	198	35	1052
5:30 PM	16	103	89	45	126	57	27	225	35	53	187	31	994
5:45 PM	7	105	73	46	120	49	16	188	31	56	156	17	864
6:00 PM	7	90	57	33	116	64	15	193	37	39	141	21	813
6:15 PM	10	80	72	41	112	46	9	151	22	47	134	22	746
6:30 PM	13	89	59	34	104	39	11	123	24	17	134	11	658
6:45 PM	14	45	53	15	88	38	12	64	29	31	119	10	518
TOTAL VOLUMES :	149	1186	895	473	1462	621	168	2081	432	501	1760	260	9988
APPROACH %'s :	6.68%	53.18%	40.13%	18.51%	57.20%	24.30%	6.27%	77.62%	16.11%	19.87%	69.81%	10.31%	
PEAK HR START TIME :	4:45 PM												TOTAL
PEAK HR VOL :	53	440	353	194	573	225	58	838	163	200	662	116	3875
PEAK HR FACTOR :	0.916												0.921

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	1	0
1	0	0	0
0	1	0	0
0	0	0	0
2	1	0	1
1	0	0	0
0	0	1	1
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
NB	SB	EB	WB
5	2	2	2

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-008

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Main St			S Main St			E Del Amo Blvd			E Del Amo Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	
7:00 AM	18	101	28	7	68	37	21	85	2	45	210	17	639
7:15 AM	13	84	42	10	103	41	38	115	11	42	308	12	819
7:30 AM	19	147	67	13	142	38	37	119	7	68	288	17	962
7:45 AM	23	149	51	11	134	30	32	176	8	59	251	22	946
8:00 AM	21	135	79	17	91	16	34	136	12	49	219	10	819
8:15 AM	14	106	70	14	83	26	35	131	6	44	224	17	770
8:30 AM	13	62	45	7	63	40	27	135	3	34	220	12	661
8:45 AM	10	79	53	9	65	31	24	104	5	25	172	12	589
9:00 AM	8	49	42	8	61	27	12	83	12	24	170	8	504
9:15 AM	8	49	42	9	56	31	15	99	12	33	130	9	493
9:30 AM	7	68	48	4	43	20	21	80	6	30	117	19	463
9:45 AM	12	63	48	12	60	23	23	104	6	30	96	12	489
TOTAL VOLUMES :	166	1092	615	121	969	360	319	1367	90	483	2405	167	8154
APPROACH %'s :	8.86%	58.30%	32.84%	8.34%	66.83%	24.83%	17.96%	76.97%	5.07%	15.81%	78.72%	5.47%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	76	515	239	51	470	125	141	546	38	218	1066	61	3546
PEAK HR FACTOR :	0.883												0.922

UTURNS			
NB	SB	EB	WB
0		0	1
0		0	0
2		1	0
1		0	0
0		0	0
0		0	0
0		0	0
0		0	0
1		0	0
0		0	1
0		0	0
1		0	1

NB	SB	EB	WB
5	0	1	3

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-008

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Main St			S Main St			E Del Amo Blvd			E Del Amo Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	
4:00 PM	7	105	80	31	157	41	32	246	28	40	139	19	925
4:15 PM	12	96	80	29	174	44	31	214	30	46	163	11	930
4:30 PM	8	105	69	32	174	35	39	221	22	48	139	11	903
4:45 PM	7	100	74	26	187	27	40	271	16	47	165	14	974
5:00 PM	10	95	72	27	191	36	47	271	40	55	185	12	1041
5:15 PM	12	108	78	31	186	42	35	271	31	73	225	19	1111
5:30 PM	13	99	70	43	185	45	41	279	28	66	210	15	1094
5:45 PM	6	98	66	31	149	32	36	251	30	62	192	13	966
6:00 PM	14	77	78	34	143	21	21	233	24	41	172	16	874
6:15 PM	4	77	71	23	137	21	28	230	30	48	168	12	849
6:30 PM	7	63	67	19	121	28	18	163	24	35	125	4	674
6:45 PM	2	58	40	11	89	30	16	112	9	42	131	8	548
TOTAL VOLUMES :	NL 102	NT 1081	NR 845	SL 337	ST 1893	SR 402	EL 384	ET 2762	ER 312	WL 603	WT 2014	WR 154	TOTAL 10889
APPROACH %'s :	5.03%	53.30%	41.67%	12.80%	71.92%	15.27%	11.10%	79.87%	9.02%	21.76%	72.68%	5.56%	
PEAK HR START TIME :	4:45 PM												TOTAL
PEAK HR VOL :	42	402	294	127	749	150	163	1092	115	241	785	60	4220
PEAK HR FACTOR :	0.932			0.940			0.957			0.856			0.950

UTURNS			
NB	SB	EB	WB
1	0	0	0
0	0	1	1
0	0	0	0
0	0	0	0
0	0	0	0
0	0	1	0
0	0	0	0
1	1	0	0
2	1	0	1
0	0	1	1
0	0	0	1
0	1	0	0
NB 4	SB 3	EB 3	WB 4

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-010

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Avalon Blvd			S Avalon Blvd			E Del Amo Blvd			E Del Amo Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	1	2	3	0	1	2	1	1	2	1	
7:00 AM	44	97	17	25	102	35	32	80	4	25	225	19	705
7:15 AM	52	142	43	30	155	59	50	103	5	36	204	19	898
7:30 AM	64	158	28	36	183	50	46	116	9	35	234	16	975
7:45 AM	74	243	32	43	146	52	64	161	20	50	201	32	1118
8:00 AM	56	241	36	42	126	53	79	143	18	50	178	23	1045
8:15 AM	61	240	38	44	130	56	72	117	15	39	188	27	1027
8:30 AM	57	148	25	39	112	49	45	92	16	46	187	24	840
8:45 AM	54	147	30	37	120	36	51	89	12	57	166	25	824
9:00 AM	38	153	27	29	97	23	42	77	18	62	123	20	709
9:15 AM	34	155	31	39	102	36	42	81	11	52	134	26	743
9:30 AM	23	155	32	38	88	47	59	67	17	49	159	22	756
9:45 AM	41	178	33	41	124	28	47	82	16	37	93	18	738
TOTAL VOLUMES :	598	2057	372	443	1485	524	629	1208	161	538	2092	271	10378
APPROACH %'s :	19.76%	67.96%	12.29%	18.07%	60.56%	21.37%	31.48%	60.46%	8.06%	18.55%	72.11%	9.34%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	255	882	134	165	585	211	261	537	62	174	801	98	4165
PEAK HR FACTOR :	0.910												0.931

UTURNS			
NB	SB	EB	WB
8	7	0	2
5	11	2	6
7	12	1	3
16	18	0	3
16	18	2	10
13	16	2	8
11	13	0	10
6	13	0	10
8	5	2	13
4	14	2	4
11	20	1	8
17	15	2	6
NB	SB	EB	WB
122	162	14	83

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-010

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL	
	S Avalon Blvd			S Avalon Blvd			E Del Amo Blvd			E Del Amo Blvd				
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
LANES:	NL 1	NT 3	NR 1	SL 2	ST 3	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1		
4:00 PM	41	178	45	68	254	73	61	214	60	52	140	35	1221	
4:15 PM	26	237	44	59	178	54	61	199	64	70	91	34	1117	
4:30 PM	45	221	56	88	243	53	50	218	61	66	132	36	1269	
4:45 PM	42	241	48	89	233	64	53	226	64	60	161	43	1324	
5:00 PM	50	228	61	87	171	67	53	215	56	60	159	31	1238	
5:15 PM	41	246	38	71	234	75	46	243	55	66	183	32	1330	
5:30 PM	54	209	49	78	231	73	57	213	48	69	136	29	1246	
5:45 PM	48	201	47	91	239	48	47	208	60	54	129	31	1203	
6:00 PM	40	210	45	88	173	64	55	221	59	59	109	35	1158	
6:15 PM	34	206	33	62	232	53	42	228	57	63	121	18	1149	
6:30 PM	31	210	43	84	213	42	57	196	57	53	105	24	1115	
6:45 PM	37	171	30	74	197	40	37	195	43	48	69	33	974	
TOTAL VOLUMES :	489	2558	539	939	2598	706	619	2576	684	720	1535	381	14344	
APPROACH %'s :	13.64%	71.33%	15.03%	22.13%	61.23%	16.64%	15.96%	66.41%	17.63%	27.31%	58.23%	14.45%		
PEAK HR START TIME :	430 PM													TOTAL
PEAK HR VOL :	178	936	203	335	881	259	202	902	236	252	635	142	5161	
PEAK HR FACTOR :	0.971			0.955			0.974			0.915			0.970	

UTURNS			
NB	SB	EB	WB
5	16	0	9
7	15	4	11
8	30	0	5
5	21	1	8
5	26	1	10
7	19	1	5
5	17	1	11
10	21	1	5
5	25	0	10
5	13	4	17
8	28	0	12
10	14	2	8
NB	SB	EB	WB
80	245	15	111

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-011

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	Hamilton Ave			Hamilton Ave			SR 110 SB Ramps			SR 110 SB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	1	1	0	2	0	0	0	0	1.5	0	0.5	
7:00 AM	0	8	18	80	19	0	0	0	0	160	0	75	360
7:15 AM	0	13	41	105	19	0	0	0	0	205	0	106	489
7:30 AM	0	10	36	111	25	0	0	0	0	215	0	55	452
7:45 AM	0	22	32	70	26	0	0	0	0	171	0	92	413
8:00 AM	0	30	31	76	23	0	0	0	0	204	0	95	459
8:15 AM	0	18	19	79	22	0	0	0	0	234	0	88	460
8:30 AM	0	26	40	79	26	0	0	0	0	217	0	82	470
8:45 AM	0	19	30	79	25	0	0	0	0	205	0	96	454
9:00 AM	0	11	26	66	36	0	0	0	0	176	0	60	375
9:15 AM	0	12	29	60	35	0	0	0	0	182	0	71	389
9:30 AM	0	18	31	53	28	0	0	0	0	192	0	63	385
9:45 AM	0	19	31	54	29	0	0	0	0	171	0	72	376
TOTAL VOLUMES :	0	206	364	912	313	0	0	0	0	2332	0	955	5082
APPROACH %'s :	0.00%	36.14%	63.86%	74.45%	25.55%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	70.95%	0.00%	29.05%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	0	93	120	313	96	0	0	0	0	860	0	361	1843
PEAK HR FACTOR :	0.807			0.974			0.000			0.948			0.980

UTURNS			
NB	SB	EB	WB
0	0	0	0

NB	SB	EB	WB
0	0	0	0

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

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-011

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	Hamilton Ave			Hamilton Ave			SR 110 SB Ramps			SR 110 SB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	1	0	2	0	0	0	0	1.5	0	0.5	
4:00 PM	0	19	74	146	25	0	0	0	0	106	0	31	401
4:15 PM	0	23	78	126	22	0	0	0	0	99	0	24	372
4:30 PM	0	15	98	139	21	0	0	0	0	91	0	25	389
4:45 PM	0	15	75	140	20	0	0	0	0	108	0	42	400
5:00 PM	0	12	109	135	34	0	0	0	0	96	0	30	416
5:15 PM	0	6	116	161	40	0	0	0	0	75	0	30	428
5:30 PM	0	18	109	149	18	0	0	0	0	88	0	41	423
5:45 PM	0	10	91	141	20	0	0	0	0	82	0	27	371
6:00 PM	0	16	82	141	20	0	0	0	0	94	0	29	382
6:15 PM	0	9	49	125	19	0	0	0	0	110	0	31	343
6:30 PM	0	10	75	108	20	0	0	0	0	102	0	29	344
6:45 PM	0	7	50	105	13	0	0	0	0	106	0	17	298
TOTAL VOLUMES :	0	160	1006	1616	272	0	0	0	0	1157	0	356	4567
APPROACH %'s :	0.00%	13.72%	86.28%	85.59%	14.41%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	76.47%	0.00%	23.53%	
PEAK HR START TIME :	4:45 PM												
PEAK HR VOL :	0	51	409	585	112	0	0	0	0	367	0	143	1667
PEAK HR FACTOR :	0.906			0.867			0.000			0.850			0.974

UTURNS			
NB	SB	EB	WB
			1
			0
			0
			1
			0
			0
			0
			1
			0
			0
			1
			0
			0
			0

NB	SB	EB	WB
0	0	0	4

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

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-012

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL		
	Figueroa St			Figueroa St			SR 110 NB Ramps			SR 110 NB Ramps					
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND					
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL		
	2	2	0	0	2	1	1.5	0	0.5	0	0	0			
7:00 AM	150	118	0	0	59	30	99	0	55	0	0	0	511		
7:15 AM	153	138	0	0	117	26	106	0	67	0	0	0	607		
7:30 AM	160	173	0	0	130	35	109	0	85	0	0	0	692		
7:45 AM	155	180	0	0	141	40	153	0	70	0	0	0	739		
8:00 AM	171	184	0	0	108	29	149	0	62	0	0	0	703		
8:15 AM	164	148	0	0	93	33	155	0	91	0	0	0	684		
8:30 AM	156	148	0	0	92	31	115	0	60	0	0	0	602		
8:45 AM	124	108	0	0	66	40	94	0	82	0	0	0	514		
9:00 AM	130	112	0	0	64	31	84	0	41	0	0	0	462		
9:15 AM	136	74	0	0	56	32	95	0	58	0	0	0	451		
9:30 AM	134	77	0	0	62	35	100	0	63	0	0	0	471		
9:45 AM	153	81	0	0	53	35	85	0	59	0	0	0	466		
TOTAL VOLUMES :	1786	1541	0	0	1041	397	1344	0	793	0	0	0	6902		
APPROACH %'s :	53.68%	46.32%	0.00%	0.00%	72.39%	27.61%	62.89%	0.00%	37.11%	#DIV/0!	#DIV/0!	#DIV/0!			
PEAK HR START TIME :	730 AM												TOTAL		
PEAK HR VOL :	650	685	0	0	472	137	566	0	308	0	0	0	2818		
PEAK HR FACTOR :	0.940												0.888	0.000	0.953

UTURNS			
NB	SB	EB	WB
0	0	0	0

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-012

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	Figueroa St			Figueroa St			SR 110 NB Ramps			SR 110 NB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	2	0	0	2	1	1.5	0	0.5	0	0	0	
4:00 PM	185	113	0	0	130	42	77	0	48	0	0	0	595
4:15 PM	150	135	0	0	164	35	82	0	50	0	0	0	616
4:30 PM	161	119	0	0	148	55	94	0	45	0	0	0	622
4:45 PM	126	124	0	0	151	37	85	0	50	0	0	0	573
5:00 PM	156	111	0	0	183	55	75	0	30	0	0	0	610
5:15 PM	159	116	0	0	248	57	100	5	45	0	0	0	730
5:30 PM	153	112	0	0	162	56	103	0	53	0	0	0	639
5:45 PM	156	112	0	0	145	48	68	0	57	0	0	0	586
6:00 PM	183	89	0	0	137	52	62	0	34	0	0	0	557
6:15 PM	141	86	0	0	133	54	79	0	43	0	0	0	536
6:30 PM	154	84	0	0	119	25	76	0	35	0	0	0	493
6:45 PM	139	59	0	0	110	38	54	0	34	0	0	0	434
TOTAL VOLUMES :	1863	1260	0	0	1830	554	955	5	524	0	0	0	6991
APPROACH %'s :	59.65%	40.35%	0.00%	0.00%	76.76%	23.24%	64.35%	0.34%	35.31%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	624	451	0	0	738	216	346	5	185	0	0	0	2565
PEAK HR FACTOR :	0.977												0.878

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
3	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-014

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL	
	Hamilton Ave			Hamilton Ave			W Torrance Blvd			W Torrance Blvd				
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
	0	0	0	0.5	0	1.5	1	2	0	0	2	0		
4:00 PM	0	0	0	46	0	70	49	343	0	0	127	30	665	
4:15 PM	0	0	0	39	0	67	52	310	0	0	124	42	634	
4:30 PM	0	0	0	42	0	65	55	310	0	0	135	35	642	
4:45 PM	0	0	0	44	0	85	42	293	0	0	130	43	637	
5:00 PM	0	0	0	57	0	65	57	307	0	0	132	56	674	
5:15 PM	0	0	0	46	0	53	57	333	0	0	157	62	708	
5:30 PM	0	0	0	40	0	62	37	284	0	0	158	70	651	
5:45 PM	0	0	0	39	0	61	52	322	0	0	145	42	661	
6:00 PM	0	0	0	45	0	61	54	315	0	0	120	35	630	
6:15 PM	0	0	0	57	0	66	34	306	0	0	136	20	619	
6:30 PM	0	0	0	49	0	66	50	248	0	0	102	24	539	
6:45 PM	0	0	0	37	0	74	39	211	0	0	91	14	466	
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	40.49%	0.00%	59.51%	13.89%	86.11%	0.00%	0.00%	76.70%	23.30%		
TOTAL	0	0	0	541	0	795	578	3582	0	0	1557	473	7526	
PEAK HR START TIME :	500 PM													TOTAL
PEAK HR VOL :	0	0	0	182	0	241	203	1246	0	0	592	230	2694	
PEAK HR FACTOR :	0.000			0.867			0.929			0.901			0.951	

UTURNS			
NB	SB	EB	WB

NB	SB	EB	WB
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-015

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	Figueroa St			Figueroa St			W Torrance Blvd			W Torrance Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 0	SL 1	ST 2	SR 1	EL 1.5	ET 1	ER 0.5	WL 1	WT 2	WR 1	
4:00 PM	23	78	17	21	82	64	190	169	43	12	72	29	800
4:15 PM	21	101	8	35	104	82	155	152	31	16	69	26	800
4:30 PM	28	87	6	20	97	75	150	177	32	10	64	38	784
4:45 PM	32	110	15	33	105	79	131	154	48	9	67	10	793
5:00 PM	27	78	15	28	106	87	143	191	38	11	75	41	840
5:15 PM	21	100	11	33	136	95	161	173	39	9	101	35	914
5:30 PM	20	68	7	19	94	104	151	155	32	13	103	43	809
5:45 PM	17	82	17	34	101	82	142	162	48	15	88	41	829
6:00 PM	26	66	12	29	90	54	180	163	44	8	76	27	775
6:15 PM	26	63	6	29	77	61	139	164	37	5	74	32	713
6:30 PM	17	62	10	34	67	42	140	138	32	5	70	31	648
6:45 PM	21	52	5	28	91	41	116	92	29	2	48	27	552
TOTAL VOLUMES :	279	947	129	343	1150	866	1798	1890	453	115	907	380	9257
APPROACH %'s :	20.59%	69.89%	9.52%	14.54%	48.75%	36.71%	43.42%	45.64%	10.94%	8.20%	64.69%	27.10%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	85	328	50	114	437	368	597	681	157	48	367	160	3392
PEAK HR FACTOR :	0.877												0.928

UTURNS			
NB	SB	EB	WB
0	0		
0	0		
0	1		
0	1		
1	0		
0	0		
0	0		
1	0		
2	0		
2	0		
0	0		
NB	SB	EB	WB
7	2	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-016

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

AM

NS/EW Streets:	S Main St		S Main St			W Torrance Blvd			W Torrance Blvd			TOTAL	
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	2	2	0	1	2	1	0.5	0.5	1	0	1	0	
7:00 AM	69	86	1	6	65	38	41	6	23	3	18	10	366
7:15 AM	87	95	0	4	102	51	37	2	28	3	17	10	436
7:30 AM	92	165	4	4	153	72	64	5	49	3	20	9	640
7:45 AM	98	158	3	1	135	76	52	8	61	3	27	15	637
8:00 AM	88	150	0	5	88	48	69	5	64	0	15	7	539
8:15 AM	81	115	2	2	82	54	65	5	51	4	13	4	478
8:30 AM	56	78	0	6	66	40	51	4	39	5	12	11	368
8:45 AM	56	62	2	2	62	35	58	1	55	1	13	5	352
9:00 AM	61	47	1	2	66	31	47	3	57	1	9	5	330
9:15 AM	63	56	2	5	61	43	41	5	37	2	9	10	334
9:30 AM	53	65	0	3	46	31	44	4	35	1	11	11	304
9:45 AM	37	68	3	5	52	37	48	6	39	5	8	6	314
TOTAL VOLUMES :	841	1145	18	45	978	556	617	54	538	31	172	103	5098
APPROACH %'s :	41.97%	57.14%	0.90%	2.85%	61.94%	35.21%	51.03%	4.47%	44.50%	10.13%	56.21%	33.66%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	359	588	9	12	458	250	250	23	225	10	75	35	2294
PEAK HR FACTOR :	0.916												0.896
	0.786												0.902
													0.667

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

NB	SB	EB	WB
2	11	0	1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-016

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Main St			S Main St			W Torrance Blvd			W Torrance Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	2	0	1	2	1	0.5	0.5	1	0	1	0	
4:00 PM	44	114	1	7	166	51	81	10	112	1	13	4	604
4:15 PM	52	101	3	6	178	45	69	11	118	0	7	7	597
4:30 PM	46	85	3	9	187	46	85	7	111	2	11	2	594
4:45 PM	39	100	3	5	217	52	66	15	114	1	4	6	622
5:00 PM	58	100	1	11	182	70	77	15	139	1	10	5	669
5:15 PM	57	109	5	13	210	76	77	15	125	4	10	7	708
5:30 PM	77	116	1	12	181	78	60	13	117	2	12	7	676
5:45 PM	83	111	2	9	182	68	71	27	117	4	11	6	691
6:00 PM	65	103	2	8	147	40	71	14	106	3	5	6	570
6:15 PM	62	73	1	10	167	40	66	10	105	0	9	3	546
6:30 PM	67	68	0	11	118	30	56	15	102	1	7	5	480
6:45 PM	50	81	3	5	106	54	27	10	67	3	10	2	418
TOTAL VOLUMES :	700	1161	25	106	2041	650	806	162	1333	22	109	60	7175
APPROACH %'s :	37.12%	61.56%	1.33%	3.79%	72.97%	23.24%	35.03%	7.04%	57.93%	11.52%	57.07%	31.41%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	275	436	9	45	755	292	285	70	498	11	43	25	2744
PEAK HR FACTOR :	0.918												0.969

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
1	0	0	0
1	0	0	0
1	0	0	0
2	0	0	0
1	0	0	0
0	0	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-018

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Avalon Blvd			S Avalon Blvd			SR 405 EB Ramps			SR 405 EB Ramps			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	2	0	0	2	1	2	2	1	0	0	0	
4:00 PM	0	276	30	0	208	116	52	26	73	0	0	0	781
4:15 PM	0	300	32	0	246	99	42	24	64	0	0	0	807
4:30 PM	0	251	31	0	229	97	52	31	63	0	0	0	754
4:45 PM	0	272	35	0	249	90	52	32	49	0	0	0	779
5:00 PM	0	282	52	0	217	98	39	29	69	0	0	0	786
5:15 PM	0	305	64	0	236	94	45	42	63	0	0	0	849
5:30 PM	0	280	37	0	225	98	34	24	82	0	0	0	780
5:45 PM	0	246	30	0	212	111	44	25	82	0	0	0	750
6:00 PM	0	273	32	1	239	86	40	32	68	0	0	0	771
6:15 PM	0	264	43	0	250	83	60	12	83	0	0	0	795
6:30 PM	0	185	31	0	223	90	55	10	71	0	0	0	665
6:45 PM	0	207	23	0	196	101	68	12	108	0	0	0	715
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	0	3141	440	1	2730	1163	583	299	875	0	0	0	9232
	0.00%	87.71%	12.29%	0.03%	70.11%	29.87%	33.18%	17.02%	49.80%	#DIV/0!	#DIV/0!	#DIV/0!	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	1139	188	0	927	380	170	127	263	0	0	0	3194
PEAK HR FACTOR :	0.899			0.964			0.933			0.000			0.941

UTURNS			
NB	SB	EB	WB
		0	
		0	
		0	
		0	
		1	
		0	
		0	
		0	
		0	
		0	
		0	
		1	
NB	SB	EB	WB
0	0	2	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-020

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL			
	S Main St			S Main St			E 213th St			E 213th St						
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND						
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
	1	2	0	1	2	0	0	0	0	0	1	0				
7:00 AM	0	112	18	17	80	0	0	0	0	49	0	48	324			
7:15 AM	0	119	27	14	113	0	0	0	0	79	0	72	424			
7:30 AM	0	180	30	32	160	0	0	0	0	80	0	82	564			
7:45 AM	1	186	61	31	152	0	0	0	0	80	0	68	579			
8:00 AM	3	182	42	41	109	0	0	0	0	52	0	79	508			
8:15 AM	1	130	43	26	82	0	0	0	0	42	0	54	378			
8:30 AM	0	79	25	24	82	0	0	0	0	49	0	40	299			
8:45 AM	1	81	29	14	78	0	0	0	0	40	0	43	286			
9:00 AM	0	70	25	18	83	0	0	0	0	34	0	53	283			
9:15 AM	0	63	24	23	83	0	0	0	0	37	0	49	279			
9:30 AM	0	74	22	16	58	0	0	0	0	30	0	36	236			
9:45 AM	0	65	36	25	68	0	0	0	0	42	0	38	274			
TOTAL VOLUMES :	6	1341	382	281	1148	0	0	0	0	614	0	662	4434			
APPROACH %'s :	0.35%	77.56%	22.09%	19.66%	80.34%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	48.12%	0.00%	51.88%				
PEAK HR START TIME :	715 AM												TOTAL			
PEAK HR VOL :	4	667	160	118	534	0	0	0	0	291	0	301	2075			
PEAK HR FACTOR :	0.838												0.849	0.000	0.914	0.896

UTURNS			
NB	SB	EB	WB
0	0		
0	0		
0	0		
1	0		
3	0		
1	1		
0	0		
1	0		
0	0		
0	1		
0	0		
0	0		

NB	SB	EB	WB
6	2	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-020

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Main St			S Main St			E 213th St			E 213th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	2	0	1	2	0	0	0	0	0	1	0	
4:00 PM	1	126	58	87	179	0	0	0	0	48	0	34	533
4:15 PM	1	122	48	91	206	0	0	0	0	48	0	34	550
4:30 PM	0	105	52	76	206	0	0	0	0	64	0	44	547
4:45 PM	1	119	67	89	234	0	0	0	0	66	0	29	605
5:00 PM	1	104	70	101	201	0	0	0	0	62	0	37	576
5:15 PM	2	137	71	89	240	0	0	0	0	45	0	37	621
5:30 PM	1	134	54	79	198	0	0	0	0	54	0	61	581
5:45 PM	2	114	56	105	213	0	0	0	0	43	0	63	596
6:00 PM	0	118	47	80	198	0	0	0	0	48	0	46	537
6:15 PM	0	93	44	75	186	0	0	0	0	49	0	35	482
6:30 PM	0	89	30	70	181	0	0	0	0	28	0	28	426
6:45 PM	3	106	30	60	121	0	0	0	0	31	0	19	370
TOTAL VOLUMES :	12	1367	627	1002	2363	0	0	0	0	586	0	467	6424
APPROACH %'s :	0.60%	68.15%	31.26%	29.78%	70.22%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	55.65%	0.00%	44.35%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	5	494	262	358	873	0	0	0	0	227	0	164	2383
PEAK HR FACTOR :	0.906												0.959

UTURNS			
NB	SB	EB	WB
1	0		
1	0		
0	0		
1	0		
1	0		
2	0		
1	1		
2	0		
0	0		
0	0		
0	0		
3	0		
12	1	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-021

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Avalon Blvd			S Avalon Blvd			E 213th St			E 213th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	11	136	16	6	139	25	34	23	15	13	36	8	462
7:15 AM	35	180	25	12	169	32	52	34	12	26	56	11	644
7:30 AM	28	186	29	10	259	40	53	49	28	41	76	11	810
7:45 AM	25	232	54	12	271	56	61	74	25	31	62	21	924
8:00 AM	16	219	26	23	168	44	70	43	20	24	41	23	717
8:15 AM	26	192	37	12	154	34	44	38	23	16	37	16	629
8:30 AM	21	153	22	6	131	32	41	26	10	19	30	11	502
8:45 AM	20	140	36	15	147	44	41	31	13	11	36	10	544
9:00 AM	24	129	24	7	133	30	43	31	12	15	31	10	489
9:15 AM	18	130	26	11	148	36	26	24	12	13	16	17	477
9:30 AM	24	140	26	13	132	34	30	16	11	19	25	6	476
9:45 AM	22	166	29	21	143	23	47	23	19	18	32	12	555
TOTAL VOLUMES :	270	2003	350	148	1994	430	542	412	200	246	478	156	7229
APPROACH %'s :	10.29%	76.36%	13.34%	5.75%	77.53%	16.72%	46.97%	35.70%	17.33%	27.95%	54.32%	17.73%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	104	817	134	57	867	172	236	200	85	122	235	66	3095
PEAK HR FACTOR :	0.848			0.808			0.814			0.826			0.837

UTURNS			
NB	SB	EB	WB

3	0		
6	0		
3	0		
3	0		
0	0		
3	0		
4	0		
5	1		
11	0		
7	1		
10	0		
8	2		

NB	SB	EB	WB
63	4	0	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-021

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Avalon Blvd			S Avalon Blvd			E 213th St			E 213th St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	3	0	1	3	0	1	1	0	1	2	0	
4:00 PM	35	245	36	27	220	41	70	60	26	40	46	17	863
4:15 PM	30	230	34	23	232	44	57	65	17	24	46	13	815
4:30 PM	34	228	34	19	221	54	53	71	26	29	41	12	822
4:45 PM	41	229	36	21	211	47	58	64	33	35	46	16	837
5:00 PM	51	267	25	23	228	40	60	80	25	32	62	14	907
5:15 PM	20	251	31	19	222	50	71	76	22	29	55	27	873
5:30 PM	31	231	33	27	235	45	65	74	29	25	41	15	851
5:45 PM	24	197	26	25	216	42	64	65	26	28	46	7	766
6:00 PM	27	236	24	18	238	47	59	53	22	23	41	18	806
6:15 PM	23	231	26	27	259	48	64	68	18	20	39	16	839
6:30 PM	11	161	21	24	227	57	45	60	16	26	26	11	685
6:45 PM	24	170	24	26	232	45	46	28	22	15	23	10	665
TOTAL VOLUMES :	351	2676	350	279	2741	560	712	764	282	326	512	176	9729
APPROACH %'s :	10.39%	79.24%	10.36%	7.79%	76.56%	15.64%	40.50%	43.46%	16.04%	32.15%	50.49%	17.36%	
PEAK HR START TIME :	4:45 PM												TOTAL
PEAK HR VOL :	143	978	125	90	896	182	254	294	109	121	204	72	3468
PEAK HR FACTOR :	0.908												0.956

UTURNS			
NB	SB	EB	WB
12	0		
12	0		
5	1		
14	0		
8	1		
2	0		
7	1		
3	0		
1	0		
6	0		
2	1		
4	1		
TOTAL	76	5	0

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-022

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Vermont Ave			S Vermont Ave			W Carson St			W Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL
7:00 AM	35	131	31	16	91	41	32	143	15	90	233	27	885
7:15 AM	39	199	27	15	112	44	39	144	12	88	260	22	1001
7:30 AM	57	191	53	23	110	38	38	186	24	91	347	19	1177
7:45 AM	53	241	48	30	113	41	25	164	28	61	288	39	1131
8:00 AM	45	172	35	19	86	46	40	170	24	74	317	44	1072
8:15 AM	54	177	26	16	94	44	37	119	19	44	270	21	921
8:30 AM	44	129	22	14	69	28	30	159	24	54	313	18	904
8:45 AM	36	128	16	16	79	25	35	150	21	45	279	25	855
9:00 AM	26	81	23	23	62	31	24	163	25	38	216	23	735
9:15 AM	37	98	23	26	69	25	20	132	21	32	224	17	724
9:30 AM	26	99	24	14	60	30	28	165	28	38	253	24	789
9:45 AM	27	77	24	13	66	35	25	137	24	26	231	32	717
TOTAL VOLUMES :	479	1723	352	225	1011	428	373	1832	265	681	3231	311	10911
APPROACH %'s :	18.75%	67.46%	13.78%	13.52%	60.76%	25.72%	15.10%	74.17%	10.73%	16.13%	76.51%	7.36%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	194	803	163	87	421	169	142	664	88	314	1212	124	4381
PEAK HR FACTOR :	0.848			0.920			0.901			0.903			0.931

UTURNS			
NB	SB	EB	WB
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	1
0	0	0	0
1	1	0	0
0	0	1	1
NB	SB	EB	WB
2	1	1	2

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-022

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Vermont Ave			S Vermont Ave			W Carson St			W Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 2	NR 1	SL 1	ST 2	SR 1	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	
4:00 PM	21	118	52	43	151	39	55	207	48	30	216	39	1019
4:15 PM	30	110	49	34	170	45	43	215	41	32	180	28	977
4:30 PM	28	130	58	27	133	48	44	222	52	28	240	32	1042
4:45 PM	31	143	50	38	147	52	43	193	44	19	194	24	978
5:00 PM	21	107	46	41	180	46	43	235	63	28	198	22	1030
5:15 PM	27	136	61	38	207	62	27	190	38	22	202	32	1042
5:30 PM	33	100	43	41	176	68	46	234	50	30	194	20	1035
5:45 PM	36	101	44	47	165	42	37	218	58	23	195	20	986
6:00 PM	25	77	42	21	140	59	38	236	49	22	221	25	955
6:15 PM	30	89	42	39	153	55	26	215	60	18	195	24	946
6:30 PM	33	54	32	24	119	56	28	237	39	29	254	20	925
6:45 PM	31	70	32	33	146	40	18	191	31	37	227	16	872
TOTAL VOLUMES :	NL 346	NT 1235	NR 551	SL 426	ST 1887	SR 612	EL 448	ET 2593	ER 573	WL 318	WT 2516	WR 302	TOTAL 11807
APPROACH %'s :	16.23%	57.93%	25.84%	14.56%	64.51%	20.92%	12.40%	71.75%	15.86%	10.14%	80.23%	9.63%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	117	444	194	167	728	218	153	877	209	103	789	94	4093
PEAK HR FACTOR :	0.843			0.906			0.908			0.963			0.982

UTURNS			
NB	SB	EB	WB
1	1	1	0
0	0	0	0
0	0	0	1
0	0	0	1
0	0	0	0
0	0	0	0
0	0	0	2
0	0	0	0
0	1	1	1
0	0	0	2
0	0	0	0
1	0	0	0
NB 0	SB 2	EB 2	WB 7

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-023

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL			
	Figueroa St			Figueroa St			W Carson St			W Carson St						
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND						
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
	2	2	0	2	2	0	1	2	1	1	2	0				
7:00 AM	49	88	20	3	54	47	26	72	87	5	107	10	568			
7:15 AM	70	102	21	7	76	45	25	68	98	9	107	7	635			
7:30 AM	89	128	43	14	142	88	37	90	120	8	116	11	886			
7:45 AM	99	124	44	19	90	96	41	86	110	7	109	13	838			
8:00 AM	84	160	35	4	57	78	40	78	105	13	92	15	761			
8:15 AM	61	112	21	9	53	51	30	70	88	15	99	9	618			
8:30 AM	64	117	24	8	47	46	27	75	73	8	104	15	608			
8:45 AM	60	95	20	16	50	45	23	91	75	10	98	12	595			
9:00 AM	33	85	11	8	46	37	36	68	95	13	92	22	546			
9:15 AM	32	61	19	10	46	24	24	82	93	14	91	8	504			
9:30 AM	49	71	15	11	54	32	11	70	80	11	88	7	499			
9:45 AM	43	53	33	7	40	28	30	81	83	18	80	14	510			
TOTAL VOLUMES :	733	1196	306	116	755	617	350	931	1107	131	1183	143	7568			
APPROACH %'s :	32.80%	53.51%	13.69%	7.80%	50.74%	41.47%	14.66%	38.99%	46.36%	8.99%	81.19%	9.81%				
PEAK HR START TIME :	715 AM												TOTAL			
PEAK HR VOL :	342	514	143	44	365	307	143	322	433	37	424	46	3120			
PEAK HR FACTOR :	0.895												0.734	0.909	0.939	0.880

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

NB	SB	EB	WB
0	12	2	2

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-023

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	Figueroa St			Figueroa St			W Carson St			W Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	70	92	41	17	101	39	32	141	123	10	103	6	775
4:15 PM	57	90	29	17	107	40	38	131	136	15	93	8	761
4:30 PM	63	74	25	26	106	49	29	131	130	12	99	14	758
4:45 PM	38	84	21	28	116	38	27	135	109	21	98	5	720
5:00 PM	46	66	19	24	104	54	33	147	114	15	102	8	732
5:15 PM	65	95	25	19	128	65	36	126	113	8	90	5	775
5:30 PM	53	59	17	14	111	49	28	133	138	20	88	8	718
5:45 PM	53	58	25	20	101	49	27	148	111	11	103	10	716
6:00 PM	47	61	19	20	91	43	28	131	118	11	90	8	667
6:15 PM	61	61	27	17	90	31	16	142	128	8	94	8	683
6:30 PM	53	51	22	16	84	39	40	128	117	28	97	3	678
6:45 PM	48	39	25	14	84	25	30	119	130	14	92	12	632
TOTAL VOLUMES :	654	830	295	232	1223	521	364	1612	1467	173	1149	95	8615
APPROACH %'s :	36.76%	46.66%	16.58%	11.74%	61.89%	26.37%	10.57%	46.82%	42.61%	12.21%	81.09%	6.70%	
PEAK HR START TIME :	400 PM												TOTAL
PEAK HR VOL :	228	340	116	88	430	166	126	538	498	58	393	33	3014
PEAK HR FACTOR :	0.842												0.972

UTURNS			
NB	SB	EB	WB
1	2	0	0
0	0	0	0
1	7	0	0
0	4	0	2
1	4	1	2
0	4	0	0
0	3	0	0
0	2	0	0
0	3	1	0
0	2	0	0
0	5	1	1
0	2	0	1
NB	SB	EB	WB
3	38	3	6

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-024

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Main St			S Main St			W Carson St			W Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 3	NR 0	SL 1	ST 3	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	
7:00 AM	31	114	14	9	74	22	9	68	9	2	74	5	431
7:15 AM	32	109	20	6	114	23	17	69	15	5	88	7	505
7:30 AM	19	188	34	13	177	15	25	84	33	9	82	8	687
7:45 AM	36	226	41	12	133	19	23	89	41	13	80	16	729
8:00 AM	45	185	26	13	119	25	27	69	11	12	69	13	614
8:15 AM	30	124	12	15	92	17	7	80	14	16	81	19	507
8:30 AM	33	91	14	19	73	17	8	62	15	10	64	7	413
8:45 AM	31	85	22	23	70	15	9	83	8	12	62	10	430
9:00 AM	34	72	13	20	79	10	15	48	11	9	73	10	394
9:15 AM	25	68	10	17	66	19	11	64	12	14	66	6	378
9:30 AM	36	73	18	14	62	12	17	53	6	10	64	10	375
9:45 AM	30	58	12	23	63	17	17	66	10	20	78	12	406
TOTAL VOLUMES :	NL 382	NT 1393	NR 236	SL 184	ST 1122	SR 211	EL 185	ET 835	ER 185	WL 132	WT 881	WR 123	TOTAL 5869
APPROACH %'s :	19.00%	69.27%	11.74%	12.13%	73.96%	13.91%	15.35%	69.29%	15.35%	11.62%	77.55%	10.83%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	130	723	113	53	521	76	82	322	99	50	312	56	2537
PEAK HR FACTOR :	0.797												0.870

UTURNS			
NB	SB	EB	WB
5	0	0	0
3	0	0	0
5	0	0	0
9	2	0	1
17	0	0	0
14	0	0	1
5	1	1	0
9	0	0	0
9	0	0	1
9	3	0	1
12	1	0	2
12	1	0	0
NB 109	SB 8	EB 1	WB 6

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-024

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Main St			S Main St			W Carson St			W Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	0	1	3	0	1	3	0	1	3	0	
4:00 PM	42	146	29	47	188	20	32	106	19	18	80	6	733
4:15 PM	37	141	24	29	169	27	20	111	18	26	70	7	679
4:30 PM	45	132	22	46	194	20	24	119	10	20	87	16	735
4:45 PM	28	118	32	32	204	32	37	131	9	27	82	12	744
5:00 PM	42	127	27	45	182	24	23	109	13	26	70	4	692
5:15 PM	40	150	16	35	186	31	29	121	10	27	83	19	747
5:30 PM	38	130	23	43	207	30	24	99	17	20	71	26	728
5:45 PM	31	117	23	38	175	23	26	128	23	24	98	14	720
6:00 PM	34	124	19	39	201	28	19	98	19	18	69	19	687
6:15 PM	39	77	13	34	174	32	18	133	18	25	82	20	665
6:30 PM	38	98	19	37	157	27	29	91	22	18	79	4	619
6:45 PM	46	95	39	29	123	22	23	95	24	23	69	8	596
TOTAL VOLUMES :	460	1455	286	454	2160	316	304	1341	202	272	940	155	8345
APPROACH %'s :	20.90%	66.11%	12.99%	15.49%	73.72%	10.78%	16.46%	72.60%	10.94%	19.90%	68.76%	11.34%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	155	527	97	158	766	107	113	480	42	100	322	51	2918
PEAK HR FACTOR :	0.945												0.977

UTURNS			
NB	SB	EB	WB
11	4	0	0
13	0	2	2
15	7	0	2
9	6	3	10
16	8	0	2
10	0	1	2
10	3	0	1
11	3	1	1
14	6	2	3
13	4	1	1
9	6	5	0
16	5	1	1
NB	SB	EB	WB
147	52	16	25

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-025

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	S Avalon Blvd			S Avalon Blvd			E Carson St			E Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	3	0	1	3	0	2	2	0	2	2	0	
7:00 AM	15	132	126	17	119	7	18	87	7	83	89	21	721
7:15 AM	18	152	114	33	132	7	27	82	13	84	80	30	772
7:30 AM	13	173	141	46	225	9	20	118	13	101	83	22	964
7:45 AM	19	202	134	32	222	17	32	143	24	103	92	27	1047
8:00 AM	10	196	111	22	150	21	35	112	15	93	61	17	843
8:15 AM	22	162	97	30	125	24	28	87	21	52	63	25	736
8:30 AM	22	133	113	26	108	12	18	74	9	53	74	16	658
8:45 AM	15	123	81	33	107	23	28	69	17	42	64	20	622
9:00 AM	17	113	67	16	116	25	30	52	19	47	75	18	595
9:15 AM	18	105	49	33	119	11	14	66	13	54	83	17	582
9:30 AM	21	121	69	24	105	29	23	78	19	50	63	24	626
9:45 AM	26	122	65	34	128	18	35	88	12	49	65	33	675
TOTAL VOLUMES :	216	1734	1167	346	1656	203	308	1056	182	811	892	270	8841
APPROACH %'s :	6.93%	55.63%	37.44%	15.69%	75.10%	9.21%	19.92%	68.31%	11.77%	41.10%	45.21%	13.68%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	60	723	500	133	729	54	114	455	65	381	316	96	3626
PEAK HR FACTOR :	0.904												0.866

UTURNS			
NB	SB	EB	WB
0	1	1	2
1	3	1	1
0	1	0	2
1	0	1	1
0	0	1	3
0	0	3	1
1	1	1	4
1	2	1	3
0	1	1	0
0	2	3	2
4	1	3	4
0	1	1	5
NB	SB	EB	WB
8	13	17	28

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-025

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	S Avalon Blvd			S Avalon Blvd			E Carson St			E Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	1	3	0	1	3	0	2	2	0	2	2	0	
4:00 PM	14	191	124	44	190	36	46	107	24	64	61	33	934
4:15 PM	27	177	105	62	166	22	31	93	29	83	71	29	895
4:30 PM	18	192	107	50	179	31	27	134	15	86	79	27	945
4:45 PM	7	173	124	53	194	24	25	160	19	85	82	40	986
5:00 PM	14	207	114	52	214	28	48	150	15	115	79	30	1066
5:15 PM	27	199	123	54	184	22	37	165	21	81	87	26	1026
5:30 PM	15	189	117	58	195	25	40	133	14	96	87	22	991
5:45 PM	19	155	108	62	183	22	40	170	21	86	101	22	989
6:00 PM	20	203	95	38	192	38	47	141	17	69	94	24	978
6:15 PM	24	163	118	50	195	43	31	132	27	88	85	28	984
6:30 PM	20	132	77	42	186	33	30	148	20	70	66	18	842
6:45 PM	20	152	73	43	184	32	31	105	18	59	80	25	822
TOTAL VOLUMES :	225	2133	1285	608	2262	356	433	1638	240	982	972	324	11458
APPROACH %'s :	6.18%	58.55%	35.27%	18.85%	70.12%	11.04%	18.74%	70.88%	10.39%	43.11%	42.67%	14.22%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	75	750	462	226	776	97	165	618	71	378	354	100	4072
PEAK HR FACTOR :	0.922												0.955

UTURNS			
NB	SB	EB	WB
1	1	1	1
1	0	1	2
1	0	2	1
1	0	1	3
0	1	2	4
0	1	1	0
2	1	1	0
2	0	1	1
1	0	3	0
1	0	1	1
2	0	3	1
0	0	2	2

NB	SB	EB	WB
12	4	19	16

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-026

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	SR 405 SB Ramps			SR 405 SB Ramps			E Carson St			E Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
7:00 AM	22	1	37	0	1	3	0	107	145	27	219	8	570
7:15 AM	28	1	44	0	0	3	2	127	152	24	273	2	656
7:30 AM	21	1	63	0	0	0	2	152	145	32	293	3	712
7:45 AM	20	5	67	0	1	2	3	181	165	24	245	6	719
8:00 AM	12	1	55	0	0	0	2	161	118	17	168	2	536
8:15 AM	15	1	54	0	0	0	4	145	126	13	169	2	529
8:30 AM	13	2	41	0	0	2	1	101	116	24	160	8	468
8:45 AM	7	1	53	0	0	1	0	115	115	17	137	3	449
9:00 AM	13	1	46	0	0	1	0	87	73	14	170	5	410
9:15 AM	5	0	36	0	0	0	1	86	73	14	181	2	398
9:30 AM	14	1	34	0	0	0	2	93	78	13	137	5	377
9:45 AM	16	2	36	0	0	0	2	126	82	8	174	5	451
TOTAL VOLUMES :	186	17	566	0	2	12	19	1481	1388	227	2326	51	6275
APPROACH %'s :	24.19%	2.21%	73.60%	0.00%	14.29%	85.71%	0.66%	51.28%	48.06%	8.72%	89.32%	1.96%	
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	91	8	211	0	2	8	7	567	607	107	1030	19	2657
PEAK HR FACTOR :	0.842			0.625			0.846			0.881			0.924

UTURNS			
NB	SB	EB	WB
		0	1
		0	0
		0	0
		1	0
		1	0
		0	0
		0	0
		1	0
		1	0
		1	0
NB	0	SB	0
		EB	5
		WB	1

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-026

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	SR 405 SB Ramps			SR 405 SB Ramps			E Carson St			E Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
4:00 PM	13	0	14	0	0	0	1	210	151	24	207	1	621
4:15 PM	7	4	14	0	0	0	3	212	152	14	196	2	604
4:30 PM	4	2	20	0	0	4	3	211	179	24	232	6	685
4:45 PM	9	2	11	0	0	4	4	242	204	22	243	10	751
5:00 PM	9	1	18	0	0	2	1	269	198	36	232	5	771
5:15 PM	5	3	9	0	0	0	2	258	215	21	239	4	756
5:30 PM	5	0	14	0	0	1	8	247	165	26	235	2	703
5:45 PM	7	2	14	0	0	3	2	242	210	27	206	5	718
6:00 PM	3	1	12	0	0	0	2	192	171	21	211	2	615
6:15 PM	9	1	7	0	0	0	3	178	178	19	186	8	589
6:30 PM	4	4	22	0	0	2	3	156	147	18	160	4	520
6:45 PM	8	2	27	0	0	1	4	150	101	14	164	1	472
TOTAL VOLUMES :	83	22	182	0	0	17	36	2567	2071	266	2511	50	7805
APPROACH %'s :	28.92%	7.67%	63.41%	0.00%	0.00%	100.00%	0.77%	54.92%	44.31%	9.41%	88.82%	1.77%	
PEAK HR START TIME :	4:45 PM												TOTAL
PEAK HR VOL :	28	6	52	0	0	7	15	1016	782	105	949	21	2981
PEAK HR FACTOR :	0.768			0.438			0.954			0.977			0.967

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

NB	SB	EB	WB
0	0	10	2

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-027

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	AM												TOTAL
	SR 405 NB Ramps			SR 405 SB Ramps			E Carson St			E Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1.5	0.5	0.5	0.5	1	1	2	0	1	2	1	
7:00 AM	1	1	1	5	4	111	23	114	9	6	152	64	491
7:15 AM	3	0	1	4	5	112	16	135	8	0	185	55	524
7:30 AM	1	1	1	8	2	104	27	184	16	4	227	60	635
7:45 AM	2	2	1	4	4	93	17	222	6	4	183	65	603
8:00 AM	2	1	0	4	0	78	16	191	7	2	104	61	466
8:15 AM	2	4	2	2	6	69	17	164	13	3	113	67	462
8:30 AM	4	1	6	8	7	92	15	125	8	4	105	43	418
8:45 AM	1	2	3	8	6	58	15	135	11	5	104	43	391
9:00 AM	2	2	4	2	6	84	21	112	4	2	101	51	391
9:15 AM	2	0	1	7	2	80	15	91	6	3	120	55	382
9:30 AM	5	4	1	6	4	52	17	107	9	7	88	41	341
9:45 AM	7	6	3	15	7	88	22	127	14	6	95	59	449
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	40.00%	30.00%	30.00%	6.36%	4.62%	89.01%	10.84%	83.72%	5.44%	2.01%	68.95%	29.03%	5553
PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	7	4	4	21	15	420	83	655	39	14	747	244	2253
PEAK HR FACTOR :	0.750			0.942			0.793			0.863			0.887

UTURNS			
NB	SB	EB	WB
0	0	0	2
0	0	0	0
1	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	1	0	0
0	0	0	1
1	0	0	1
0	0	0	1
1	0	0	1

NB	SB	EB	WB
0	4	1	6

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-5771-027

Day: Wednesday

City: Carson

TOTALS

Date: 11/16/2016

NS/EW Streets:	PM												TOTAL
	SR 405 NB Ramps			SR 405 SB Ramps			E Carson St			E Carson St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1.5	0.5	0.5	0.5	1	1	2	0	1	2	1	
4:00 PM	13	7	11	10	6	93	44	181	6	11	126	83	591
4:15 PM	10	10	11	14	3	98	21	188	9	8	100	71	543
4:30 PM	10	2	8	5	2	83	27	205	4	8	165	119	638
4:45 PM	9	1	4	13	5	104	30	215	7	10	170	85	653
5:00 PM	8	7	6	8	1	101	33	251	11	6	161	111	704
5:15 PM	7	6	5	8	0	96	31	220	8	4	162	86	633
5:30 PM	11	6	5	9	2	95	23	241	9	3	156	95	655
5:45 PM	4	7	4	6	0	85	27	232	5	2	145	61	578
6:00 PM	13	4	7	7	1	85	20	176	5	1	132	60	511
6:15 PM	13	3	4	8	2	87	18	171	5	1	119	45	476
6:30 PM	4	7	4	14	2	82	14	152	4	6	95	61	445
6:45 PM	8	5	7	11	1	78	18	152	9	0	97	44	430
TOTAL VOLUMES :	110	65	76	113	25	1087	306	2384	82	60	1628	921	6857
APPROACH %'s :	43.82%	25.90%	30.28%	9.22%	2.04%	88.73%	11.04%	86.00%	2.96%	2.30%	62.40%	35.30%	
PEAK HR START TIME :	4:45 PM												TOTAL
PEAK HR VOL :	35	20	20	38	8	396	117	927	35	23	649	377	2645
PEAK HR FACTOR :	0.852			0.906			0.914			0.943			0.939

UTURNS			
NB	SB	EB	WB
0	1	0	0
0	1	2	0
1	0	0	0
2	1	0	0
2	0	0	0
0	0	0	0
0	0	0	0
1	0	0	0
1	0	0	0
1	0	0	0
2	0	0	0
0	1	0	0

NB	SB	EB	WB
0	10	4	2

CONTROL : Signalized

**APPENDIX D:
MODIFIED PROJECT LOS ANALYSIS SHEETS**

EXISTING - ICU

Project Title: The Districts
Intersection: 2 - Figueroa St & I-405 NB Off Ramp
Description: Existing

Thru Lane: 1200 vph
 Left Lane: 1200 vph
 Double Lt Penalty: 20 %
 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): 0.375 *
	TH	2.00	693	2,400	0.289	N-S(2): 0.289
	LT	0.00	0	0	0.000 *	E-W(1): 0.164
Westbound	RT	1.00	292	1,200	0.243 *	E-W(2): 0.243 *
	TH	0.00	0	0	0.000	V/C: 0.618
	LT	1.00	197	1,200	0.164	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	900	2,400	0.375 *	ICU: 0.718
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.311
	TH	2.00	1,675	2,400	0.698 *	N-S(2): 0.698 *
	LT	0.00	0	0	0.000	E-W(1): 0.064
Westbound	RT	1.00	131	1,200	0.109 *	E-W(2): 0.109 *
	TH	0.00	0	0	0.000	V/C: 0.807
	LT	1.00	77	1,200	0.064	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	747	2,400	0.311	ICU: 0.907
	LT	0.00	0	0	0.000 *	LOS: E
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: The Districts
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.276 *
	TH	2.00	667	3,200	0.208	N-S(2): 0.209
	LT	1.00	88	1,600	0.055 *	E-W(1): 0.067 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.016
	TH	0.00	0	0	0.000	V/C: 0.343
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	56	0	0.000	ITS: 0.000
	TH	2.00	648	1,600	0.221 *	ICU: 0.443
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.10	11	164	0.066	
	TH	0.90	96	1,436	0.067 *	
	LT	1.00	26	1,600	0.016	

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): 0.365 *
	TH	2.00	1,072	3,200	0.335	N-S(2): 0.335
	LT	1.00	226	1,600	0.141 *	E-W(1): 0.426 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.791
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	120	0	0.000	ITS: 0.000
	TH	2.00	598	3,200	0.224 *	ICU: 0.891
	LT	0.00	0	0	0.000	LOS: D
Eastbound	RT	0.07	45	106	0.426	
	TH	0.93	636	1,494	0.426 *	
	LT	1.00	17	1,600	0.011	

* - Denotes critical movement

Project Title: The Districts
Intersection: 4 - S Main St & I-405 NB Off Ramp
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	83	0	0.000	N-S(1): 0.204
	TH	2.00	648	3,200	0.228 *	N-S(2): 0.246 *
	LT	0.00	0	0	0.000	E-W(1): 0.048
Westbound	RT	0.00	190	0	0.000	E-W(2): 0.201 *
	TH	2.00	377	1,600	0.201 *	V/C: 0.447
	LT	0.00	77	1,600	0.048	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	653	3,200	0.204	ICU: 0.547
	LT	1.00	29	1,600	0.018 *	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	60	0	0.000	N-S(1): 0.190
	TH	2.00	1,223	1,600	0.401 *	N-S(2): 0.416 *
	LT	0.00	1	1,600	0.001	E-W(1): 0.037
Westbound	RT	0.00	235	1,600	0.147 *	E-W(2): 0.147 *
	TH	2.00	120	1,600	0.075	V/C: 0.563
	LT	0.00	59	1,600	0.037	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	605	3,200	0.189	ICU: 0.663
	LT	1.00	24	1,600	0.015 *	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: The Districts
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1): 0.391 * N-S(2): 0.100 E-W(1): 0.211 E-W(2): 0.249 *
	TH	2.00	263	3,200	0.082	
	LT	1.00	119	1,600	0.074 *	
Westbound	RT	1.00	396	1,600	0.210 *	V/C: 0.640 Lost Time: 0.100 ITS: 0.000
	TH	1.00	210	1,600	0.131	
	LT	1.00	277	1,600	0.173	
Northbound	RT	0.00	268	0	0.000	ICU: 0.740
	TH	2.00	746	3,200	0.317 *	
	LT	1.00	28	1,600	0.018	
Eastbound	RT	0.00	16	0	0.000	LOS: C
	TH	2.00	107	3,200	0.038	
	LT	1.00	62	1,600	0.039 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	84	1,600	0.044	N-S(1): 0.485 * N-S(2): 0.301 E-W(1): 0.211 * E-W(2): 0.124
	TH	2.00	952	3,200	0.298	
	LT	1.00	414	1,600	0.259 *	
Westbound	RT	1.00	197	1,600	0.000	V/C: 0.696 Lost Time: 0.100 ITS: 0.000
	TH	1.00	170	1,600	0.106	
	LT	1.00	259	1,600	0.162 *	
Northbound	RT	0.00	209	0	0.000	ICU: 0.796
	TH	2.00	513	3,200	0.226 *	
	LT	1.00	4	1,600	0.003	
Eastbound	RT	0.00	14	0	0.000	LOS: C
	TH	2.00	144	3,200	0.049 *	
	LT	1.00	28	1,600	0.018	

* - Denotes critical movement

Project Title: The Districts
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	437	1,600	0.228 *	N-S(1):	0.251
	TH	2.00	378	3,200	0.118	N-S(2):	0.351 *
	LT	1.00	42	1,600	0.026	E-W(1):	0.210
Westbound	RT	1.00	160	1,600	0.087	E-W(2):	0.377 *
	TH	2.00	914	3,200	0.286 *	V/C:	0.728
	LT	1.00	145	1,600	0.091	Lost Time:	0.100
Northbound	RT	1.00	324	1,600	0.157	ITS:	0.000
	TH	2.00	721	3,200	0.225	ICU:	0.828
	LT	1.00	196	1,600	0.123 *	LOS:	D
Eastbound	RT	1.00	98	1,600	0.000		
	TH	2.00	381	3,200	0.119		
	LT	1.00	146	1,600	0.091 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	226	1,600	0.123	N-S(1):	0.281 *
	TH	2.00	576	3,200	0.180	N-S(2):	0.213
	LT	1.00	195	1,600	0.122 *	E-W(1):	0.389 *
Westbound	RT	1.00	117	1,600	0.012	E-W(2):	0.244
	TH	2.00	665	3,200	0.208	V/C:	0.670
	LT	1.00	201	1,600	0.126 *	Lost Time:	0.100
Northbound	RT	1.00	355	1,600	0.159 *	ITS:	0.000
	TH	2.00	442	3,200	0.138	ICU:	0.770
	LT	1.00	53	1,600	0.033	LOS:	C
Eastbound	RT	1.00	164	1,600	0.086		
	TH	2.00	842	3,200	0.263 *		
	LT	1.00	58	1,600	0.036		

* - Denotes critical movement

Project Title: The Districts
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	126	0	0.000	N-S(1): 0.269 *
	TH	2.00	472	3,200	0.187	N-S(2): 0.235
	LT	1.00	51	1,600	0.032 *	E-W(1): 0.259
Westbound	RT	0.00	61	0	0.000	E-W(2): 0.325 *
	TH	3.00	1,071	4,800	0.236 *	V/C: 0.594
	LT	1.00	219	1,600	0.137	Lost Time: 0.100
Northbound	RT	0.00	240	0	0.000	ITS: 0.000
	TH	2.00	518	3,200	0.237 *	ICU: 0.694
	LT	1.00	76	1,600	0.048	LOS: B
Eastbound	RT	0.00	38	0	0.000	
	TH	3.00	549	4,800	0.122	
	LT	1.00	142	1,600	0.089 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	151	0	0.000	N-S(1): 0.298
	TH	2.00	753	3,200	0.283 *	N-S(2): 0.309 *
	LT	1.00	128	1,600	0.080	E-W(1): 0.404 *
Westbound	RT	0.00	60	0	0.000	E-W(2): 0.280
	TH	3.00	789	4,800	0.177	V/C: 0.713
	LT	1.00	242	1,600	0.151 *	Lost Time: 0.100
Northbound	RT	0.00	295	0	0.000	ITS: 0.000
	TH	2.00	404	3,200	0.218	ICU: 0.813
	LT	1.00	42	1,600	0.026 *	LOS: D
Eastbound	RT	0.00	116	0	0.000	
	TH	3.00	1,097	4,800	0.253 *	
	LT	1.00	164	1,600	0.103	

* - Denotes critical movement

Project Title: The Districts
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	212	0	0.000	N-S(1):	0.250
	TH	3.00	588	4,800	0.167 *	N-S(2):	0.327 *
	LT	2.00	166	2,560	0.065	E-W(1):	0.278
Westbound	RT	1.00	98	1,600	0.029	E-W(2):	0.416 *
	TH	2.00	805	3,200	0.252 *	V/C:	0.743
	LT	1.00	175	1,600	0.109	Lost Time:	0.100
Northbound	RT	1.00	135	1,600	0.030	ITS:	0.000
	TH	3.00	886	4,800	0.185	ICU:	0.843
	LT	1.00	256	1,600	0.160 *	LOS:	D
Eastbound	RT	1.00	62	1,600	0.000		
	TH	2.00	540	3,200	0.169		
	LT	1.00	262	1,600	0.164 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	260	0	0.000	N-S(1):	0.328
	TH	3.00	885	4,800	0.239 *	N-S(2):	0.351 *
	LT	2.00	337	2,560	0.132	E-W(1):	0.441 *
Westbound	RT	1.00	143	1,600	0.024	E-W(2):	0.326
	TH	2.00	638	3,200	0.199	V/C:	0.792
	LT	1.00	253	1,600	0.158 *	Lost Time:	0.100
Northbound	RT	1.00	204	1,600	0.048	ITS:	0.000
	TH	3.00	941	4,800	0.196	ICU:	0.892
	LT	1.00	179	1,600	0.112 *	LOS:	D
Eastbound	RT	1.00	237	1,600	0.092		
	TH	2.00	907	3,200	0.283 *		
	LT	1.00	203	1,600	0.127		

* - Denotes critical movement

Project Title: The Districts
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	138	1,600	0.086	N-S(1): 0.215 N-S(2): 0.403 * E-W(1): 0.147 E-W(2): 0.343 *
	TH	2.00	474	3,200	0.148 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	0	0	0.000	V/C: 0.746 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	0	0	0.000	ICU: 0.846
	TH	2.00	688	3,200	0.215	
	LT	2.00	653	2,560	0.255 *	
Eastbound	RT	0.71	310	1,129	0.147	LOS: D
	TH	0.00	0	0	0.000	
	LT	1.29	569	1,657	0.343 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	217	1,600	0.136	N-S(1): 0.142 N-S(2): 0.400 * E-W(1): 0.046 E-W(2): 0.211 *
	TH	3.00	742	4,800	0.155 *	
	LT	0.00	0	0	0.000	
Westbound	RT	0.00	0	0	0.000	V/C: 0.611 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	0	0	0.000	ICU: 0.711
	TH	2.00	453	3,200	0.142	
	LT	2.00	627	2,560	0.245 *	
Eastbound	RT	0.70	189	1,122	0.046	LOS: C
	TH	0.00	0	0	0.000	
	LT	1.30	350	1,662	0.211 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 14 - Hamilton Ave & W Torrance Blvd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.50	572	2,393	0.209	N-S(1): 0.239 * N-S(2): 0.209 E-W(1): 0.316 E-W(2): 0.394 *
	TH	0.00	0	0	0.000	
	LT	0.50	193	807	0.239 *	
Westbound	RT	0.00	82	0	0.000	V/C: 0.633 Lost Time: 0.100 ITS: 0.000
	TH	2.00	985	3,200	0.333 *	
	LT	0.00	0	0	0.000	
Northbound	RT	0.00	0	0	0.000	ICU: 0.733
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	LOS: C
	TH	2.00	1,010	3,200	0.316	
	LT	1.00	97	1,600	0.061 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.14	242	1,822	0.069	N-S(1): 0.133 * N-S(2): 0.069 E-W(1): 0.391 * E-W(2): 0.386
	TH	0.00	0	0	0.000	
	LT	0.86	183	1,378	0.133 *	
Westbound	RT	0.00	231	0	0.000	V/C: 0.524 Lost Time: 0.100 ITS: 0.000
	TH	2.00	595	3,200	0.258	
	LT	0.00	0	0	0.000 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.624
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	LOS: B
	TH	2.00	1,252	3,200	0.391 *	
	LT	1.00	204	1,600	0.128	

* - Denotes critical movement

Project Title: The Districts
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	426	1,600	0.109	N-S(1):	0.236 *
	TH	2.00	324	3,200	0.101	N-S(2):	0.221
	LT	1.00	55	1,600	0.034 *	E-W(1):	0.459 *
Westbound	RT	1.00	151	1,600	0.077	E-W(2):	0.000
	TH	2.00	463	3,200	0.145 *	V/C:	0.695
	LT	1.00	59	1,600	0.037	Lost Time:	0.100
Northbound	RT	0.00	58	0	0.000	ITS:	0.000
	TH	2.00	588	3,200	0.202 *	ICU:	0.795
	LT	1.00	179	1,600	0.112	LOS:	C
Eastbound	RT	0.00	159	0	0.000		
	TH	1.51	446	2,410	0.251		
	LT	1.49	600	1,912	0.314 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	370	1,600	0.043	N-S(1):	0.191 *
	TH	2.00	439	3,200	0.137	N-S(2):	0.190
	LT	1.00	115	1,600	0.072 *	E-W(1):	0.491 *
Westbound	RT	1.00	161	1,600	0.065	E-W(2):	0.000
	TH	2.00	369	3,200	0.115 *	V/C:	0.682
	LT	1.00	48	1,600	0.030	Lost Time:	0.100
Northbound	RT	0.00	50	0	0.000	ITS:	0.000
	TH	2.00	330	3,200	0.119 *	ICU:	0.782
	LT	1.00	85	1,600	0.053	LOS:	C
Eastbound	RT	0.00	158	0	0.000		
	TH	1.75	684	2,803	0.300		
	LT	1.25	600	1,598	0.376 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 16 - S Main St & W Torrance Blvd
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	251	1,600	0.071	N-S(1): 0.196 N-S(2): 0.285 * E-W(1): 0.246 * E-W(2): 0.000
	TH	2.00	460	3,200	0.144 *	
	LT	1.00	12	1,600	0.008	
Westbound	RT	0.00	35	0	0.000	V/C: 0.531 Lost Time: 0.100 ITS: 0.000
	TH	1.00	75	1,600	0.075 *	
	LT	0.00	10	1,600	0.006	
Northbound	RT	0.00	9	0	0.000	ICU: 0.631
	TH	2.00	591	3,200	0.188	
	LT	2.00	361	2,560	0.141 *	
Eastbound	RT	1.00	226	1,600	0.071	LOS: B
	TH	0.08	23	134	0.171	
	LT	0.92	251	1,466	0.171 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	293	1,600	0.072	N-S(1): 0.168 N-S(2): 0.345 * E-W(1): 0.308 * E-W(2): 0.000
	TH	2.00	759	3,200	0.237 *	
	LT	1.00	45	1,600	0.028	
Westbound	RT	0.00	25	0	0.000	V/C: 0.653 Lost Time: 0.100 ITS: 0.000
	TH	1.00	43	1,600	0.049 *	
	LT	0.00	11	1,600	0.007	
Northbound	RT	0.00	9	0	0.000	ICU: 0.753
	TH	2.00	438	3,200	0.140	
	LT	2.00	276	2,560	0.108 *	
Eastbound	RT	1.00	500	1,600	0.259 *	LOS: C
	TH	0.20	70	315	0.223	
	LT	0.80	286	1,285	0.223	

* - Denotes critical movement

Project Title: The Districts
Intersection: 18 - S Avalon Blvd & I-405 SB Ramps
Description: Existing

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, EBR,		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	244	1,600	0.000	N-S(1): 0.353 *
	TH	2.00	673	3,200	0.210	N-S(2): 0.210
	LT	0.00	0	0	0.000 *	E-W(1): 0.001
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.178 *
	TH	0.00	0	0	0.000 *	V/C: 0.531
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	121	0	0.000	ITS: 0.000
	TH	2.00	1,010	3,200	0.353 *	ICU: 0.631
	LT	0.00	0	0	0.000	LOS: B
Eastbound	RT	1.00	459	1,600	0.000	
	TH	2.00	3	3,200	0.001	
	LT	2.00	456	2,560	0.178 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	382	1,600	0.000	N-S(1): 0.417 *
	TH	2.00	932	3,200	0.291	N-S(2): 0.291
	LT	0.00	0	0	0.000 *	E-W(1): 0.040
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.067 *
	TH	0.00	0	0	0.000 *	V/C: 0.484
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	189	0	0.000	ITS: 0.000
	TH	2.00	1,145	3,200	0.417 *	ICU: 0.584
	LT	0.00	0	0	0.000	LOS: A
Eastbound	RT	1.00	264	1,600	0.000	
	TH	2.00	128	3,200	0.040	
	LT	2.00	171	2,560	0.067 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 19 - S Avalon Blvd & I-405 NB Ramps
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 ITS: 0 %
 OLA Movements :
 FF Movements: WBR

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	222	1,600	0.139	N-S(1):	0.370 *
	TH	3.00	785	4,800	0.164	N-S(2):	0.289
	LT	0.00	0	0	0.000 *	E-W(1):	0.036 *
Westbound	RT	1.00	540	1,600	0.000	E-W(2):	0.029
	TH	0.04	2	70	0.029	V/C:	0.406
	LT	1.96	90	2,504	0.036 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	1,185	3,200	0.370 *	ICU:	0.506
	LT	2.00	321	2,560	0.125		
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	1.00	506	1,600	0.316 *	N-S(1):	0.291
	TH	3.00	1,226	4,800	0.255	N-S(2):	0.462 *
	LT	0.00	0	0	0.000	E-W(1):	0.036 *
Westbound	RT	1.00	385	1,600	0.000	E-W(2):	0.000
	TH	0.00	0	0	0.000	V/C:	0.498
	LT	2.00	91	2,560	0.036 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	932	3,200	0.291	ICU:	0.598
	LT	2.00	374	2,560	0.146 *		
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: The Districts
Intersection: 20 - S Main St & E 213th St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.335 * N-S(2): 0.171 E-W(1): 0.372 * E-W(2): 0.335
	TH	2.00	537	3,200	0.168	
	LT	1.00	119	1,600	0.074 *	
Westbound	RT	0.51	303	815	0.335	V/C: 0.707 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	0.49	292	785	0.372 *	
Northbound	RT	0.00	161	0	0.000	ICU: 0.807
	TH	2.00	670	1,600	0.261 *	
	LT	0.00	4	1,600	0.003	
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	0	0	0.000	N-S(1): 0.464 * N-S(2): 0.277 E-W(1): 0.246 * E-W(2): 0.133
	TH	2.00	877	3,200	0.274	
	LT	1.00	360	1,600	0.225 *	
Westbound	RT	0.42	165	672	0.133	V/C: 0.710 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	0.58	228	928	0.246 *	
Northbound	RT	0.00	263	0	0.000	ICU: 0.810
	TH	2.00	496	1,600	0.239 *	
	LT	0.00	5	1,600	0.003	
Eastbound	RT	0.00	0	0	0.000	LOS: D
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: The Districts
Intersection: 21 - S Avalon Blvd & E 213th St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	173	0	0.000	N-S(1):	0.235
	TH	3.00	871	4,800	0.218 *	N-S(2):	0.284 *
	LT	1.00	57	1,600	0.036	E-W(1):	0.256 *
Westbound	RT	0.00	66	0	0.000	E-W(2):	0.242
	TH	2.00	236	3,200	0.094	V/C:	0.540
	LT	1.00	123	1,600	0.077 *	Lost Time:	0.100
Northbound	RT	0.00	135	0	0.000	ITS:	0.000
	TH	3.00	821	4,800	0.199	ICU:	0.640
	LT	1.00	105	1,600	0.066 *	LOS:	B
Eastbound	RT	0.30	85	476	0.146		
	TH	0.70	201	1,124	0.179 *		
	LT	1.00	237	1,600	0.148		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	183	0	0.000	N-S(1):	0.287
	TH	3.00	900	4,800	0.226 *	N-S(2):	0.316 *
	LT	1.00	90	1,600	0.056	E-W(1):	0.329 *
Westbound	RT	0.00	72	0	0.000	E-W(2):	0.246
	TH	2.00	205	3,200	0.087	V/C:	0.645
	LT	1.00	122	1,600	0.076 *	Lost Time:	0.100
Northbound	RT	0.00	126	0	0.000	ITS:	0.000
	TH	3.00	983	4,800	0.231	ICU:	0.745
	LT	1.00	144	1,600	0.090 *	LOS:	C
Eastbound	RT	0.27	110	435	0.208		
	TH	0.73	295	1,165	0.253 *		
	LT	1.00	255	1,600	0.159		

* - Denotes critical movement

Project Title: The Districts
Intersection: 22 - S Vermont Ave & W Carson St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	170	1,600	0.062	N-S(1):	0.306 *
	TH	2.00	423	3,200	0.132	N-S(2):	0.254
	LT	1.00	87	1,600	0.054 *	E-W(1):	0.406
Westbound	RT	1.00	125	1,600	0.051	E-W(2):	0.470 *
	TH	2.00	1,218	3,200	0.381 *	V/C:	0.776
	LT	1.00	316	1,600	0.198	Lost Time:	0.100
Northbound	RT	1.00	164	1,600	0.004	ITS:	0.000
	TH	2.00	807	3,200	0.252 *	ICU:	0.876
	LT	1.00	195	1,600	0.122	LOS:	D
Eastbound	RT	1.00	88	1,600	0.000		
	TH	2.00	667	3,200	0.208		
	LT	1.00	143	1,600	0.089 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	219	1,600	0.089	N-S(1):	0.244
	TH	2.00	732	3,200	0.229 *	N-S(2):	0.303 *
	LT	1.00	168	1,600	0.105	E-W(1):	0.340
Westbound	RT	1.00	94	1,600	0.006	E-W(2):	0.344 *
	TH	2.00	793	3,200	0.248 *	V/C:	0.647
	LT	1.00	104	1,600	0.065	Lost Time:	0.100
Northbound	RT	1.00	195	1,600	0.089	ITS:	0.000
	TH	2.00	446	3,200	0.139	ICU:	0.747
	LT	1.00	118	1,600	0.074 *	LOS:	C
Eastbound	RT	1.00	210	1,600	0.094		
	TH	2.00	881	3,200	0.275		
	LT	1.00	154	1,600	0.096 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 23 - Figueroa St & W Carson St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	309	0	0.000	N-S(1): 0.235
	TH	2.00	367	3,200	0.211 *	N-S(2): 0.345 *
	LT	1.00	44	1,600	0.028	E-W(1): 0.497 *
Westbound	RT	0.00	46	0	0.000	E-W(2): 0.238
	TH	2.00	426	3,200	0.148	V/C: 0.842
	LT	1.00	37	1,600	0.023 *	Lost Time: 0.100
Northbound	RT	0.00	144	0	0.000	ITS: 0.000
	TH	2.00	517	3,200	0.207	ICU: 0.942
	LT	2.00	344	2,560	0.134 *	LOS: E
Eastbound	RT	0.57	435	917	0.407	
	TH	0.43	324	683	0.474 *	
	LT	1.00	144	1,600	0.090	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	167	0	0.000	N-S(1): 0.198
	TH	2.00	432	3,200	0.187 *	N-S(2): 0.276 *
	LT	1.00	88	1,600	0.055	E-W(1): 0.687 *
Westbound	RT	0.00	33	0	0.000	E-W(2): 0.213
	TH	2.00	395	3,200	0.134	V/C: 0.963
	LT	1.00	58	1,600	0.036 *	Lost Time: 0.100
Northbound	RT	0.00	117	0	0.000	ITS: 0.000
	TH	2.00	342	3,200	0.143	ICU: 1.063
	LT	2.00	229	2,560	0.089 *	LOS: F
Eastbound	RT	0.48	500	768	0.606	
	TH	0.52	541	832	0.651 *	
	LT	1.00	127	1,600	0.079	

* - Denotes critical movement

Project Title: The Districts
Intersection: 24 - S Main St & W Carson St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	76	0	0.000	N-S(1): 0.208 *
	TH	3.00	524	4,800	0.125	N-S(2): 0.207
	LT	1.00	53	1,600	0.033 *	E-W(1): 0.132
Westbound	RT	1.00	56	1,600	0.018	E-W(2): 0.149 *
	TH	2.00	314	3,200	0.098 *	V/C: 0.357
	LT	1.00	50	1,600	0.031	Lost Time: 0.100
Northbound	RT	0.00	114	0	0.000	ITS: 0.000
	TH	3.00	727	4,800	0.175 *	ICU: 0.457
	LT	1.00	131	1,600	0.082	LOS: A
Eastbound	RT	1.00	99	1,600	0.021	
	TH	2.00	324	3,200	0.101	
	LT	1.00	82	1,600	0.051 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	108	0	0.000	N-S(1): 0.230
	TH	3.00	770	4,800	0.183 *	N-S(2): 0.281 *
	LT	1.00	159	1,600	0.099	E-W(1): 0.214 *
Westbound	RT	1.00	51	1,600	0.000	E-W(2): 0.172
	TH	2.00	324	3,200	0.101	V/C: 0.495
	LT	1.00	101	1,600	0.063 *	Lost Time: 0.100
Northbound	RT	0.00	97	0	0.000	ITS: 0.000
	TH	3.00	530	4,800	0.131	ICU: 0.595
	LT	1.00	156	1,600	0.098 *	LOS: A
Eastbound	RT	1.00	42	1,600	0.000	
	TH	2.00	482	3,200	0.151 *	
	LT	1.00	114	1,600	0.071	

* - Denotes critical movement

Project Title: The Districts
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	54	0	0.000	N-S(1): 0.398 *
	TH	3.00	733	4,800	0.164	N-S(2): 0.202
	LT	1.00	134	1,600	0.084 *	E-W(1): 0.313 *
Westbound	RT	0.23	96	371	0.217	E-W(2): 0.304
	TH	0.77	318	1,229	0.259	V/C: 0.711
	LT	2.00	383	2,560	0.150 *	Lost Time: 0.100
Northbound	RT	0.00	503	1,600	0.314 *	ITS: 0.000
	TH	3.00	727	3,200	0.227	ICU: 0.811
	LT	1.00	60	1,600	0.038	LOS: D
Eastbound	RT	0.00	65	0	0.000	
	TH	2.00	457	3,200	0.163 *	
	LT	2.00	115	2,560	0.045	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	97	0	0.000	N-S(1): 0.432 *
	TH	3.00	780	4,800	0.183	N-S(2): 0.230
	LT	1.00	227	1,600	0.142 *	E-W(1): 0.364 *
Westbound	RT	0.22	101	354	0.215	E-W(2): 0.351
	TH	0.78	356	1,246	0.286	V/C: 0.796
	LT	2.00	380	2,560	0.148 *	Lost Time: 0.100
Northbound	RT	0.00	464	1,600	0.290 *	ITS: 0.000
	TH	3.00	754	3,200	0.236	ICU: 0.896
	LT	1.00	75	1,600	0.047	LOS: D
Eastbound	RT	0.00	71	0	0.000	
	TH	2.00	621	3,200	0.216 *	
	LT	2.00	166	2,560	0.065	

* - Denotes critical movement

Project Title: The Districts
Intersection: 26 - SR 405 SB Ramps & E Carson St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	10	0	0.000	N-S(1): 0.101 *
	TH	0.00	0	0	0.000	N-S(2): 0.059
	LT	0.00	0	0	0.000 *	E-W(1): 0.420 *
Westbound	RT	0.00	19	0	0.000	E-W(2): 0.224
	TH	3.00	1,035	4,800	0.220	V/C: 0.521
	LT	1.00	108	1,600	0.068 *	Lost Time: 0.100
Northbound	RT	1.00	216	1,600	0.101 *	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	95	1,600	0.059	
Eastbound	RT	1.00	610	1,600	0.352 *	ICU: 0.621
	TH	2.00	570	3,200	0.178	
	LT	1.00	7	1,600	0.004	LOS: B

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	7	0	0.000	N-S(1): 0.001
	TH	0.00	0	0	0.000 *	N-S(2): 0.019 *
	LT	0.00	0	0	0.000	E-W(1): 0.548 *
Westbound	RT	0.00	21	0	0.000	E-W(2): 0.212
	TH	3.00	954	4,800	0.203	V/C: 0.567
	LT	1.00	106	1,600	0.066 *	Lost Time: 0.100
Northbound	RT	1.00	55	1,600	0.001	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	31	1,600	0.019 *	
Eastbound	RT	1.00	786	1,600	0.482 *	ICU: 0.667
	TH	2.00	1,021	3,200	0.319	
	LT	1.00	15	1,600	0.009	LOS: B

* - Denotes critical movement

Project Title: The Districts
Intersection: 27 - SR 405 NB Ramps & E Carson St
Description: Existing

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	422	1,600	0.000	N-S(1): 0.030 *
	TH	0.42	15	667	0.023 *	N-S(2): 0.030 *
	LT	0.58	21	933	0.023 *	E-W(1): 0.227
Westbound	RT	1.00	245	1,600	0.142	E-W(2): 0.287 *
	TH	2.00	751	3,200	0.235 *	V/C: 0.317
	LT	1.00	14	1,600	0.009	Lost Time: 0.100
Northbound	RT	1.00	4	1,600	0.000	ITS: 0.000
	TH	0.36	4	582	0.007 *	ICU: 0.417
	LT	0.64	7	1,018	0.007 *	LOS: A
Eastbound	RT	0.00	39	0	0.000	
	TH	2.00	658	3,200	0.218	
	LT	1.00	83	1,600	0.052 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	398	1,600	0.000	N-S(1): 0.063 *
	TH	0.17	8	278	0.029 *	N-S(2): 0.063 *
	LT	0.83	38	1,322	0.029 *	E-W(1): 0.316 *
Westbound	RT	1.00	379	1,600	0.223	E-W(2): 0.297
	TH	2.00	652	3,200	0.204	V/C: 0.379
	LT	1.00	23	1,600	0.014 *	Lost Time: 0.100
Northbound	RT	1.00	20	1,600	0.005	ITS: 0.000
	TH	0.36	20	582	0.034 *	ICU: 0.479
	LT	0.64	35	1,018	0.034 *	LOS: A
Eastbound	RT	0.00	35	0	0.000	
	TH	2.00	932	3,200	0.302 *	
	LT	1.00	118	1,600	0.074	

* - Denotes critical movement

EXISTING PLUS PROJECT - ICU

Project Title: The Districts
Intersection: 2 - Figueroa St & I-405 NB Off Ramp
Description: Existing with Project

Thru Lane: 1200 vph
 Left Lane: 1200 vph
 Double Lt Penalty: 20 %
 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): 0.386 *
	TH	2.00	723	2,400	0.301	N-S(2): 0.301
	LT	0.00	0	0	0.000 *	E-W(1): 0.164
Westbound	RT	1.00	292	1,200	0.243 *	E-W(2): 0.243 *
	TH	0.00	0	0	0.000	V/C: 0.629
	LT	1.00	197	1,200	0.164	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	926	2,400	0.386 *	ICU: 0.729
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.324
	TH	2.00	1,713	2,400	0.714 *	N-S(2): 0.714 *
	LT	0.00	0	0	0.000	E-W(1): 0.064
Westbound	RT	1.00	131	1,200	0.109 *	E-W(2): 0.109 *
	TH	0.00	0	0	0.000	V/C: 0.823
	LT	1.00	77	1,200	0.064	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	778	2,400	0.324	ICU: 0.923
	LT	0.00	0	0	0.000 *	LOS: E
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: The Districts
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.305 *
	TH	2.00	764	3,200	0.239	N-S(2): 0.240
	LT	1.00	88	1,600	0.055 *	E-W(1): 0.067 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.016
	TH	0.00	0	0	0.000	V/C: 0.372
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	72	0	0.000	ITS: 0.000
	TH	2.00	726	1,600	0.250 *	ICU: 0.472
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.10	11	164	0.066	
	TH	0.90	96	1,436	0.067 *	
	LT	1.00	26	1,600	0.016	

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): 0.403 *
	TH	2.00	1,216	3,200	0.380	N-S(2): 0.380
	LT	1.00	226	1,600	0.141 *	E-W(1): 0.426 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.829
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	138	0	0.000	ITS: 0.000
	TH	2.00	700	3,200	0.262 *	ICU: 0.929
	LT	0.00	0	0	0.000	LOS: E
Eastbound	RT	0.07	45	106	0.426	
	TH	0.93	636	1,494	0.426 *	
	LT	1.00	17	1,600	0.011	

* - Denotes critical movement

Project Title: The Districts
Intersection: 4 - S Main St & I-405 NB Off Ramp
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	83	0	0.000	N-S(1): 0.228
	TH	2.00	736	3,200	0.256 *	N-S(2): 0.274 *
	LT	0.00	0	0	0.000	E-W(1): 0.054
Westbound	RT	0.00	190	0	0.000	E-W(2): 0.204 *
	TH	2.00	377	1,600	0.204 *	V/C: 0.478
	LT	0.00	86	1,600	0.054	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	731	3,200	0.228	ICU: 0.578
	LT	1.00	29	1,600	0.018 *	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	60	0	0.000	N-S(1): 0.222
	TH	2.00	1,345	1,600	0.439 *	N-S(2): 0.454 *
	LT	0.00	1	1,600	0.001	E-W(1): 0.051
Westbound	RT	0.00	235	1,600	0.147 *	E-W(2): 0.147 *
	TH	2.00	120	1,600	0.075	V/C: 0.601
	LT	0.00	81	1,600	0.051	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	707	3,200	0.221	ICU: 0.701
	LT	1.00	24	1,600	0.015 *	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: The Districts
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1): 0.409 *
	TH	2.00	263	3,200	0.082	N-S(2): 0.100
	LT	1.00	148	1,600	0.092 *	E-W(1): 0.310 *
Westbound	RT	1.00	423	1,600	0.218	E-W(2): 0.257
	TH	1.00	236	1,600	0.147	V/C: 0.719
	LT	1.00	420	1,600	0.262 *	Lost Time: 0.100
Northbound	RT	0.00	268	0	0.000	ITS: 0.000
	TH	2.00	746	3,200	0.317 *	ICU: 0.819
	LT	1.00	28	1,600	0.018	LOS: D
Eastbound	RT	0.00	16	0	0.000	
	TH	2.00	137	3,200	0.048 *	
	LT	1.00	62	1,600	0.039	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	84	1,600	0.044	N-S(1): 0.513 *
	TH	2.00	952	3,200	0.298	N-S(2): 0.301
	LT	1.00	460	1,600	0.287 *	E-W(1): 0.317 *
Westbound	RT	1.00	237	1,600	0.005	E-W(2): 0.144
	TH	1.00	201	1,600	0.126	V/C: 0.830
	LT	1.00	410	1,600	0.256 *	Lost Time: 0.100
Northbound	RT	0.00	209	0	0.000	ITS: 0.000
	TH	2.00	513	3,200	0.226 *	ICU: 0.930
	LT	1.00	4	1,600	0.003	LOS: E
Eastbound	RT	0.00	14	0	0.000	
	TH	2.00	182	3,200	0.061 *	
	LT	1.00	28	1,600	0.018	

* - Denotes critical movement

Project Title: The Districts
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	437	1,600	0.228 *	N-S(1):	0.270
	TH	2.00	378	3,200	0.118	N-S(2):	0.351 *
	LT	1.00	72	1,600	0.045	E-W(1):	0.517 *
Westbound	RT	1.00	186	1,600	0.094	E-W(2):	0.454
	TH	2.00	1,160	3,200	0.363	V/C:	0.868
	LT	1.00	471	1,600	0.294 *	Lost Time:	0.100
Northbound	RT	1.00	368	1,600	0.083	ITS:	0.000
	TH	2.00	721	3,200	0.225	ICU:	0.968
	LT	1.00	196	1,600	0.123 *	LOS:	E
Eastbound	RT	1.00	98	1,600	0.000		
	TH	2.00	714	3,200	0.223 *		
	LT	1.00	146	1,600	0.091		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	226	1,600	0.123	N-S(1):	0.284 *
	TH	2.00	576	3,200	0.180	N-S(2):	0.213
	LT	1.00	233	1,600	0.146 *	E-W(1):	0.857 *
Westbound	RT	1.00	148	1,600	0.020	E-W(2):	0.336
	TH	2.00	961	3,200	0.300	V/C:	1.141
	LT	1.00	663	1,600	0.415 *	Lost Time:	0.100
Northbound	RT	1.00	438	1,600	0.066	ITS:	0.000
	TH	2.00	442	3,200	0.138 *	ICU:	1.241
	LT	1.00	53	1,600	0.033	LOS:	F
Eastbound	RT	1.00	164	1,600	0.086		
	TH	2.00	1,416	3,200	0.442 *		
	LT	1.00	58	1,600	0.036		

* - Denotes critical movement

Project Title: The Districts
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	126	0	0.000	N-S(1): 0.311 * N-S(2): 0.292 E-W(1): 0.352 E-W(2): 0.441 *
	TH	2.00	539	3,200	0.208	
	LT	1.00	81	1,600	0.050 *	
Westbound	RT	0.00	77	0	0.000	V/C: 0.752 Lost Time: 0.100 ITS: 0.000
	TH	3.00	1,610	4,800	0.352 *	
	LT	1.00	233	1,600	0.145	
Northbound	RT	0.00	240	0	0.000	ICU: 0.852
	TH	2.00	596	3,200	0.261 *	
	LT	1.00	135	1,600	0.084	
Eastbound	RT	0.00	38	0	0.000	LOS: D
	TH	3.00	955	4,800	0.207	
	LT	1.00	142	1,600	0.089 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	151	0	0.000	N-S(1): 0.374 N-S(2): 0.376 * E-W(1): 0.552 * E-W(2): 0.433
	TH	2.00	826	3,200	0.305 *	
	LT	1.00	199	1,600	0.124	
Westbound	RT	0.00	78	0	0.000	V/C: 0.928 Lost Time: 0.100 ITS: 0.000
	TH	3.00	1,507	4,800	0.330	
	LT	1.00	248	1,600	0.155 *	
Northbound	RT	0.00	295	0	0.000	ICU: 1.028
	TH	2.00	506	3,200	0.250	
	LT	1.00	113	1,600	0.071 *	
Eastbound	RT	0.00	116	0	0.000	LOS: F
	TH	3.00	1,792	4,800	0.397 *	
	LT	1.00	164	1,600	0.103	

* - Denotes critical movement

Project Title: The Districts
Intersection: 9 - Stamps Dr & Del Amo Blvd
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 ITS: 0 %
 OLA Movements : NBR,
 FF Movements:

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

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	0	0	0.000	N-S(1): 0.019
	TH	0.00	0	0	0.000 *	N-S(2): 0.153 *
	LT	0.00	0	0	0.000	E-W(1): 0.333 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.282
	TH	3.00	1,352	4,800	0.282	V/C: 0.486
	LT	2.00	188	2,560	0.074 *	Lost Time: 0.100
Northbound	RT	1.00	148	1,600	0.019	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.586
	LT	3.00	586	3,840	0.153 *	LOS: A
Eastbound	RT	1.00	415	1,600	0.259 *	
	TH	3.00	888	4,800	0.185	
	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): 0.011
	TH	0.00	0	0	0.000 *	N-S(2): 0.203 *
	LT	0.00	0	0	0.000	E-W(1): 0.539 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.227
	TH	3.00	1,091	4,800	0.227	V/C: 0.742
	LT	2.00	316	2,560	0.123 *	Lost Time: 0.100
Northbound	RT	1.00	215	1,600	0.011	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.842
	LT	3.00	781	3,840	0.203 *	LOS: D
Eastbound	RT	1.00	665	1,600	0.416 *	
	TH	3.00	1,541	4,800	0.321	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: The Districts
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	261	0	0.000	N-S(1):	0.250
	TH	3.00	588	4,800	0.177 *	N-S(2):	0.360 *
	LT	2.00	166	2,560	0.065	E-W(1):	0.298
Westbound	RT	1.00	98	1,600	0.029	E-W(2):	0.466 *
	TH	2.00	882	3,200	0.276 *	V/C:	0.826
	LT	1.00	175	1,600	0.109	Lost Time:	0.100
Northbound	RT	1.00	135	1,600	0.030	ITS:	0.000
	TH	3.00	886	4,800	0.185	ICU:	0.926
	LT	1.00	293	1,600	0.183 *	LOS:	E
Eastbound	RT	1.00	135	1,600	0.000		
	TH	2.00	604	3,200	0.189		
	LT	1.00	304	1,600	0.190 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	333	0	0.000	N-S(1):	0.328
	TH	3.00	885	4,800	0.254 *	N-S(2):	0.420 *
	LT	2.00	337	2,560	0.132	E-W(1):	0.473 *
Westbound	RT	1.00	143	1,600	0.024	E-W(2):	0.402
	TH	2.00	753	3,200	0.235	V/C:	0.893
	LT	1.00	253	1,600	0.158 *	Lost Time:	0.100
Northbound	RT	1.00	204	1,600	0.048	ITS:	0.000
	TH	3.00	941	4,800	0.196	ICU:	0.993
	LT	1.00	266	1,600	0.166 *	LOS:	E
Eastbound	RT	1.00	267	1,600	0.084		
	TH	2.00	1,009	3,200	0.315 *		
	LT	1.00	267	1,600	0.167		

* - Denotes critical movement

Project Title: The Districts
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	449	1,600	0.281 *	N-S(1): 0.215
	TH	2.00	489	3,200	0.153	N-S(2): 0.536 *
	LT	0.00	0	0	0.000	E-W(1): 0.171
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.373 *
	TH	0.00	0	0	0.000 *	V/C: 0.909
	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	688	3,200	0.215	ICU: 1.009
	LT	2.00	653	2,560	0.255 *	LOS: F
Eastbound	RT	0.72	342	1,145	0.171	
	TH	0.00	0	0	0.000	
	LT	1.28	613	1,644	0.373 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	656	1,600	0.410 *	N-S(1): 0.142
	TH	3.00	766	4,800	0.160	N-S(2): 0.655 *
	LT	0.00	0	0	0.000	E-W(1): 0.088
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.263 *
	TH	0.00	0	0	0.000 *	V/C: 0.918
	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	453	3,200	0.142	ICU: 1.018
	LT	2.00	627	2,560	0.245 *	LOS: F
Eastbound	RT	0.71	239	1,139	0.088	
	TH	0.00	0	0	0.000	
	LT	1.29	433	1,649	0.263 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 13 - Main St & Lenardo Dr
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.315 * N-S(2): 0.232 E-W(1): 0.034 E-W(2): 0.067 *
	TH	2.00	744	3,200	0.232	
	LT	1.00	86	1,600	0.054 *	
Westbound	RT	1.00	150	1,600	0.067 *	V/C: 0.382 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	54	1,600	0.034	
Northbound	RT	1.00	331	1,600	0.207	ICU: 0.482
	TH	2.00	834	3,200	0.261 *	
	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): 0.387 * N-S(2): 0.349 E-W(1): 0.073 E-W(2): 0.094 *
	TH	2.00	1,117	3,200	0.349	
	LT	1.00	104	1,600	0.065 *	
Westbound	RT	1.00	203	1,600	0.094 *	V/C: 0.481 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	117	1,600	0.073	
Northbound	RT	1.00	515	1,600	0.322 *	ICU: 0.581
	TH	2.00	742	3,200	0.232	
	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 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 14 - Hamilton Ave & W Torrance Blvd
Description: Existing with Project

Thru Lane: 1600 vph	N-S Split Phase : N
Left Lane: 1600 vph	E-W Split Phase : N
Double Lt Penalty: 20 %	Lost Time (% of cycle) : 10
ITS: 0 %	V/C Round Off (decs.) : 3
OLA Movements :	
FF Movements:	

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.50	572	2,393	0.209	N-S(1): 0.239 *
	TH	0.00	0	0	0.000	N-S(2): 0.209
	LT	0.50	193	807	0.239 *	E-W(1): 0.336
Westbound	RT	0.00	103	0	0.000	E-W(2): 0.407 *
	TH	2.00	1,006	3,200	0.346 *	V/C: 0.646
	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: 0.746
	TH	2.00	1,075	3,200	0.336	
	LT	1.00	97	1,600	0.061 *	LOS: C

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.14	242	1,822	0.069	N-S(1): 0.133 *
	TH	0.00	0	0	0.000	N-S(2): 0.069
	LT	0.86	183	1,378	0.133 *	E-W(1): 0.422 *
Westbound	RT	0.00	280	0	0.000	E-W(2): 0.414
	TH	2.00	634	3,200	0.286	V/C: 0.555
	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: 0.655
	TH	2.00	1,351	3,200	0.422 *	
	LT	1.00	204	1,600	0.128	LOS: B

* - Denotes critical movement

Project Title: The Districts
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	426	1,600	0.101	N-S(1):	0.263 *
	TH	2.00	339	3,200	0.106	N-S(2):	0.218
	LT	1.00	87	1,600	0.054 *	E-W(1):	0.489 *
Westbound	RT	1.00	151	1,600	0.067	E-W(2):	0.000
	TH	2.00	505	3,200	0.158 *	V/C:	0.752
	LT	1.00	64	1,600	0.040	Lost Time:	0.100
Northbound	RT	0.00	82	0	0.000	ITS:	0.000
	TH	2.00	588	3,200	0.209 *	ICU:	0.852
	LT	1.00	179	1,600	0.112	LOS:	D
Eastbound	RT	0.00	159	0	0.000		
	TH	1.58	511	2,532	0.265		
	LT	1.42	600	1,814	0.331 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	370	1,600	0.031	N-S(1):	0.230 *
	TH	2.00	463	3,200	0.145	N-S(2):	0.198
	LT	1.00	165	1,600	0.103 *	E-W(1):	0.544 *
Westbound	RT	1.00	161	1,600	0.049	E-W(2):	0.000
	TH	2.00	457	3,200	0.143 *	V/C:	0.774
	LT	1.00	50	1,600	0.031	Lost Time:	0.100
Northbound	RT	0.00	77	0	0.000	ITS:	0.000
	TH	2.00	330	3,200	0.127 *	ICU:	0.874
	LT	1.00	85	1,600	0.053	LOS:	D
Eastbound	RT	0.00	158	0	0.000		
	TH	1.83	783	2,931	0.321		
	LT	1.17	600	1,495	0.401 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 16 - S Main St & W Torrance Blvd
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	297	1,600	0.062	N-S(1):	0.255
	TH	2.00	469	3,200	0.147 *	N-S(2):	0.288 *
	LT	1.00	12	1,600	0.008	E-W(1):	0.322 *
Westbound	RT	0.00	35	0	0.000	E-W(2):	0.000
	TH	1.00	75	1,600	0.075 *	V/C:	0.610
	LT	0.00	10	1,600	0.006	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	782	3,200	0.247	ICU:	0.710
	LT	2.00	361	2,560	0.141 *	LOS:	C
Eastbound	RT	1.00	226	1,600	0.071		
	TH	0.06	23	93	0.247		
	LT	0.94	372	1,507	0.247 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	383	1,600	0.073	N-S(1):	0.264
	TH	2.00	763	3,200	0.238 *	N-S(2):	0.346 *
	LT	1.00	45	1,600	0.028	E-W(1):	0.381 *
Westbound	RT	0.00	25	0	0.000	E-W(2):	0.000
	TH	1.00	43	1,600	0.049 *	V/C:	0.727
	LT	0.00	11	1,600	0.007	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	746	3,200	0.236	ICU:	0.827
	LT	2.00	276	2,560	0.108 *	LOS:	D
Eastbound	RT	1.00	500	1,600	0.259		
	TH	0.13	70	211	0.332		
	LT	0.87	462	1,389	0.332 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 17 - Lenardo Dr & I-405 SB Ramps
Description: Existing with Project

Thru Lane: 1600 vph	N-S Split Phase : N
Left Lane: 1600 vph	E-W Split Phase : N
Double Lt Penalty: 20 %	Lost Time (% of cycle) : 10
ITS: 0 %	V/C Round Off (decs.) : 3
OLA Movements :	
FF Movements: SBR, WBR	

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	151	1,600	0.000	N-S(1): 0.359 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	2.00	919	2,560	0.359 *	E-W(1): 0.093
Westbound	RT	1.00	280	1,600	0.000	E-W(2): 0.106 *
	TH	2.00	338	3,200	0.106 *	V/C: 0.465
	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: 0.565
	TH	3.00	445	4,800	0.093	
	LT	0.00	0	0	0.000 *	LOS: A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	239	1,600	0.000	N-S(1): 0.220 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	2.00	563	2,560	0.220 *	E-W(1): 0.181 *
Westbound	RT	1.00	397	1,600	0.000	E-W(2): 0.159
	TH	2.00	508	3,200	0.159	V/C: 0.401
	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: 0.501
	TH	3.00	867	4,800	0.181 *	
	LT	0.00	0	0	0.000	LOS: A

* - Denotes critical movement

Project Title: The Districts
Intersection: 18 - S Avalon Blvd & I-405 SB Ramps
Description: Existing with Project

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, EBR,		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	469	1,600	0.000	N-S(1): 0.356 *
	TH	2.00	709	3,200	0.222	N-S(2): 0.315
	LT	0.00	0	0	0.000 *	E-W(1): 0.047
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.226 *
	TH	0.00	0	0	0.000 *	V/C: 0.582
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	121	0	0.000	ITS: 0.000
	TH	2.00	1,019	3,200	0.356 *	ICU: 0.682
	LT	1.00	149	1,600	0.093	LOS: B
Eastbound	RT	1.00	636	1,600	0.000	
	TH	2.00	150	3,200	0.047	
	LT	2.00	577	2,560	0.226 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	720	1,600	0.000	N-S(1): 0.426 *
	TH	2.00	947	3,200	0.296	N-S(2): 0.412
	LT	0.00	0	0	0.000 *	E-W(1): 0.137
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.161 *
	TH	0.00	0	0	0.000 *	V/C: 0.587
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	189	0	0.000	ITS: 0.000
	TH	2.00	1,173	3,200	0.426 *	ICU: 0.687
	LT	1.00	185	1,600	0.116	LOS: B
Eastbound	RT	1.00	579	1,600	0.000	
	TH	2.00	438	3,200	0.137	
	LT	2.00	413	2,560	0.161 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 19 - S Avalon Blvd & I-405 NB Ramps
Description: Existing with Project

Thru Lane: 1600 vph	N-S Split Phase : N
Left Lane: 1600 vph	E-W Split Phase : N
Double Lt Penalty: 20 %	Lost Time (% of cycle) : 10
ITS: 0 %	V/C Round Off (decs.) : 3
OLA Movements :	
FF Movements: WBR	

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	222	1,600	0.139	N-S(1): 0.373 * N-S(2): 0.347 E-W(1): 0.102 * E-W(2): 0.082
	TH	3.00	858	4,800	0.179	
	LT	0.00	0	0	0.000 *	
Westbound	RT	1.00	568	1,600	0.000	V/C: 0.475 Lost Time: 0.100 ITS: 0.000
	TH	0.02	2	24	0.082	
	LT	1.98	260	2,540	0.102 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.575
	TH	2.00	1,194	3,200	0.373 *	
	LT	2.00	429	2,560	0.168	
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	1.00	506	1,600	0.316 *	N-S(1): 0.300 N-S(2): 0.545 * E-W(1): 0.149 * E-W(2): 0.000
	TH	3.00	1,256	4,800	0.262	
	LT	0.00	0	0	0.000	
Westbound	RT	1.00	444	1,600	0.000	V/C: 0.694 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	382	2,560	0.149 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.794
	TH	2.00	960	3,200	0.300	
	LT	2.00	587	2,560	0.229 *	
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: The Districts
Intersection: 20 - S Main St & E 213th St
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.395 *
	TH	2.00	546	3,200	0.171	N-S(2): 0.174
	LT	1.00	119	1,600	0.074 *	E-W(1): 0.372 *
Westbound	RT	0.51	303	815	0.335	E-W(2): 0.335
	TH	0.00	0	0	0.000	V/C: 0.767
	LT	0.49	292	785	0.372 *	Lost Time: 0.100
Northbound	RT	0.00	161	0	0.000	ITS: 0.000
	TH	2.00	861	1,600	0.321 *	ICU: 0.867
	LT	0.00	4	1,600	0.003	LOS: D
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	0	0	0.000	N-S(1): 0.560 *
	TH	2.00	881	3,200	0.275	N-S(2): 0.278
	LT	1.00	360	1,600	0.225 *	E-W(1): 0.246 *
Westbound	RT	0.42	165	672	0.133	E-W(2): 0.133
	TH	0.00	0	0	0.000	V/C: 0.806
	LT	0.58	228	928	0.246 *	Lost Time: 0.100
Northbound	RT	0.00	263	0	0.000	ITS: 0.000
	TH	2.00	804	1,600	0.335 *	ICU: 0.906
	LT	0.00	5	1,600	0.003	LOS: E
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: The Districts
Intersection: 21 - S Avalon Blvd & E 213th St
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	173	0	0.000	N-S(1): 0.274
	TH	3.00	1,046	4,800	0.254 *	N-S(2): 0.320 *
	LT	1.00	83	1,600	0.052	E-W(1): 0.256 *
Westbound	RT	0.00	96	0	0.000	E-W(2): 0.252
	TH	2.00	236	3,200	0.104	V/C: 0.576
	LT	1.00	123	1,600	0.077 *	Lost Time: 0.100
Northbound	RT	0.00	135	0	0.000	ITS: 0.000
	TH	3.00	930	4,800	0.222	ICU: 0.676
	LT	1.00	105	1,600	0.066 *	LOS: B
Eastbound	RT	0.30	85	476	0.146	
	TH	0.70	201	1,124	0.179 *	
	LT	1.00	237	1,600	0.148	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	183	0	0.000	N-S(1): 0.337
	TH	3.00	1,170	4,800	0.282 *	N-S(2): 0.372 *
	LT	1.00	121	1,600	0.076	E-W(1): 0.329 *
Westbound	RT	0.00	110	0	0.000	E-W(2): 0.258
	TH	2.00	205	3,200	0.099	V/C: 0.701
	LT	1.00	122	1,600	0.076 *	Lost Time: 0.100
Northbound	RT	0.00	126	0	0.000	ITS: 0.000
	TH	3.00	1,127	4,800	0.261	ICU: 0.801
	LT	1.00	144	1,600	0.090 *	LOS: D
Eastbound	RT	0.27	110	435	0.208	
	TH	0.73	295	1,165	0.253 *	
	LT	1.00	255	1,600	0.159	

* - Denotes critical movement

Project Title: The Districts
Intersection: 22 - S Vermont Ave & W Carson St
Description: Existing with Project

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	241	1,600	0.106	N-S(1): 0.327 *
	TH	2.00	423	3,200	0.132	N-S(2): 0.254
	LT	1.00	120	1,600	0.075 *	E-W(1): 0.437
Westbound	RT	1.00	125	1,600	0.041	E-W(2): 0.474 *
	TH	2.00	1,232	3,200	0.385 *	V/C: 0.801
	LT	1.00	319	1,600	0.199	Lost Time: 0.100
Northbound	RT	1.00	169	1,600	0.006	ITS: 0.000
	TH	2.00	807	3,200	0.252 *	
	LT	1.00	195	1,600	0.122	
Eastbound	RT	1.00	88	1,600	0.000	ICU: 0.901
	TH	2.00	762	3,200	0.238	
	LT	1.00	143	1,600	0.089 *	LOS: E

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	272	1,600	0.122	N-S(1): 0.276
	TH	2.00	732	3,200	0.229 *	N-S(2): 0.303 *
	LT	1.00	219	1,600	0.137	E-W(1): 0.391 *
Westbound	RT	1.00	94	1,600	0.000	E-W(2): 0.364
	TH	2.00	857	3,200	0.268	V/C: 0.694
	LT	1.00	117	1,600	0.073 *	Lost Time: 0.100
Northbound	RT	1.00	207	1,600	0.093	ITS: 0.000
	TH	2.00	446	3,200	0.139	
	LT	1.00	118	1,600	0.074 *	
Eastbound	RT	1.00	210	1,600	0.094	ICU: 0.794
	TH	2.00	1,018	3,200	0.318 *	
	LT	1.00	154	1,600	0.096	LOS: C

* - Denotes critical movement

Project Title: The Districts
Intersection: 23 - Figueroa St & W Carson St
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	312	0	0.000	N-S(1): 0.244
	TH	2.00	384	3,200	0.217 *	N-S(2): 0.351 *
	LT	1.00	44	1,600	0.028	E-W(1): 0.562 *
Westbound	RT	0.00	46	0	0.000	E-W(2): 0.242
	TH	2.00	440	3,200	0.152	V/C: 0.913
	LT	1.00	40	1,600	0.025 *	Lost Time: 0.100
Northbound	RT	0.00	149	0	0.000	ITS: 0.000
	TH	2.00	541	3,200	0.216	ICU: 1.013
	LT	2.00	344	2,560	0.134 *	LOS: F
Eastbound	RT	0.51	435	810	0.470	
	TH	0.49	424	790	0.537 *	
	LT	1.00	144	1,600	0.090	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	180	0	0.000	N-S(1): 0.210
	TH	2.00	445	3,200	0.195 *	N-S(2): 0.284 *
	LT	1.00	88	1,600	0.055	E-W(1): 0.788 *
Westbound	RT	0.00	33	0	0.000	E-W(2): 0.233
	TH	2.00	459	3,200	0.154	V/C: 1.072
	LT	1.00	71	1,600	0.044 *	Lost Time: 0.100
Northbound	RT	0.00	129	0	0.000	ITS: 0.000
	TH	2.00	369	3,200	0.155	ICU: 1.172
	LT	2.00	229	2,560	0.089 *	LOS: F
Eastbound	RT	0.42	500	672	0.699	
	TH	0.58	690	928	0.744 *	
	LT	1.00	127	1,600	0.079	

* - Denotes critical movement

Project Title: The Districts
Intersection: 24 - S Main St & W Carson St
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	76	0	0.000	N-S(1): 0.226 *
	TH	3.00	533	4,800	0.127	N-S(2): 0.209
	LT	1.00	53	1,600	0.033 *	E-W(1): 0.164
Westbound	RT	1.00	56	1,600	0.018	E-W(2): 0.220 *
	TH	2.00	331	3,200	0.103 *	V/C: 0.446
	LT	1.00	101	1,600	0.063	Lost Time: 0.100
Northbound	RT	0.00	114	0	0.000	ITS: 0.000
	TH	3.00	813	4,800	0.193 *	ICU: 0.546
	LT	1.00	131	1,600	0.082	LOS: A
Eastbound	RT	1.00	99	1,600	0.021	
	TH	2.00	324	3,200	0.101	
	LT	1.00	188	1,600	0.117 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	108	0	0.000	N-S(1): 0.260
	TH	3.00	774	4,800	0.184 *	N-S(2): 0.282 *
	LT	1.00	159	1,600	0.099	E-W(1): 0.265
Westbound	RT	1.00	51	1,600	0.000	E-W(2): 0.297 *
	TH	2.00	400	3,200	0.125 *	V/C: 0.579
	LT	1.00	183	1,600	0.114	Lost Time: 0.100
Northbound	RT	0.00	97	0	0.000	ITS: 0.000
	TH	3.00	678	4,800	0.161	ICU: 0.679
	LT	1.00	156	1,600	0.098 *	LOS: B
Eastbound	RT	1.00	42	1,600	0.000	
	TH	2.00	482	3,200	0.151	
	LT	1.00	274	1,600	0.172 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	122	0	0.000	N-S(1): 0.446 *
	TH	3.00	763	4,800	0.184	N-S(2): 0.222
	LT	1.00	211	1,600	0.132 *	E-W(1): 0.313
Westbound	RT	0.35	174	567	0.242	E-W(2): 0.353 *
	TH	0.65	318	1,033	0.308 *	V/C: 0.799
	LT	2.00	383	2,560	0.150	Lost Time: 0.100
Northbound	RT	0.00	503	1,600	0.314 *	ITS: 0.000
	TH	3.00	758	3,200	0.237	
	LT	1.00	60	1,600	0.038	
Eastbound	RT	0.00	65	0	0.000	ICU: 0.899
	TH	2.00	457	3,200	0.163	
	LT	2.00	115	2,560	0.045 *	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	255	0	0.000	N-S(1): 0.481 *
	TH	3.00	813	4,800	0.223	N-S(2): 0.270
	LT	1.00	306	1,600	0.191 *	E-W(1): 0.364
Westbound	RT	0.36	203	582	0.254	E-W(2): 0.415 *
	TH	0.64	356	1,018	0.350 *	V/C: 0.896
	LT	2.00	380	2,560	0.148	Lost Time: 0.100
Northbound	RT	0.00	464	1,600	0.290 *	ITS: 0.000
	TH	3.00	796	3,200	0.249	
	LT	1.00	75	1,600	0.047	
Eastbound	RT	0.00	71	0	0.000	ICU: 0.996
	TH	2.00	621	3,200	0.216	
	LT	2.00	166	2,560	0.065 *	LOS: E

* - Denotes critical movement

Project Title: The Districts
Intersection: 26 - SR 405 SB Ramps & E Carson St
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	10	0	0.000	N-S(1): 0.101 *
	TH	0.00	0	0	0.000	N-S(2): 0.059
	LT	0.00	0	0	0.000 *	E-W(1): 0.420 *
Westbound	RT	0.00	19	0	0.000	E-W(2): 0.240
	TH	3.00	1,113	4,800	0.236	V/C: 0.521
	LT	1.00	108	1,600	0.068 *	Lost Time: 0.100
Northbound	RT	1.00	216	1,600	0.101 *	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.621
	LT	1.00	95	1,600	0.059	LOS: B
Eastbound	RT	1.00	610	1,600	0.352 *	
	TH	2.00	647	3,200	0.202	
	LT	1.00	7	1,600	0.004	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	7	0	0.000	N-S(1): 0.001
	TH	0.00	0	0	0.000 *	N-S(2): 0.019 *
	LT	0.00	0	0	0.000	E-W(1): 0.548 *
Westbound	RT	0.00	21	0	0.000	E-W(2): 0.233
	TH	3.00	1,056	4,800	0.224	V/C: 0.567
	LT	1.00	106	1,600	0.066 *	Lost Time: 0.100
Northbound	RT	1.00	55	1,600	0.001	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.667
	LT	1.00	31	1,600	0.019 *	LOS: B
Eastbound	RT	1.00	786	1,600	0.482 *	
	TH	2.00	1,100	3,200	0.344	
	LT	1.00	15	1,600	0.009	

* - Denotes critical movement

Project Title: The Districts
Intersection: 27 - SR 405 NB Ramps & E Carson St
Description: Existing with Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	422	1,600	0.000	N-S(1):	0.030 *
	TH	0.42	15	667	0.023 *	N-S(2):	0.030 *
	LT	0.58	21	933	0.023 *	E-W(1):	0.251
Westbound	RT	1.00	245	1,600	0.142	E-W(2):	0.311 *
	TH	2.00	829	3,200	0.259 *	V/C:	0.341
	LT	1.00	14	1,600	0.009	Lost Time:	0.100
Northbound	RT	1.00	4	1,600	0.000	ITS:	0.000
	TH	0.36	4	582	0.007 *	ICU:	0.441
	LT	0.64	7	1,018	0.007 *	LOS:	A
Eastbound	RT	0.00	39	0	0.000		
	TH	2.00	735	3,200	0.242		
	LT	1.00	83	1,600	0.052 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	398	1,600	0.000	N-S(1):	0.063 *
	TH	0.17	8	278	0.029 *	N-S(2):	0.063 *
	LT	0.83	38	1,322	0.029 *	E-W(1):	0.341 *
Westbound	RT	1.00	379	1,600	0.223	E-W(2):	0.310
	TH	2.00	754	3,200	0.236	V/C:	0.404
	LT	1.00	23	1,600	0.014 *	Lost Time:	0.100
Northbound	RT	1.00	20	1,600	0.005	ITS:	0.000
	TH	0.36	20	582	0.034 *	ICU:	0.504
	LT	0.64	35	1,018	0.034 *	LOS:	A
Eastbound	RT	0.00	35	0	0.000		
	TH	2.00	1,011	3,200	0.327 *		
	LT	1.00	118	1,600	0.074		

* - Denotes critical movement

FUTURE BASE - ICU

Project Title: The Districts
Intersection: 2 - Figueroa St & I-405 NB Off Ramp
Description: Cumulative Base

Thru Lane: 1200 vph
 Left Lane: 1200 vph
 Double Lt Penalty: 20 %
 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): 0.387 *
	TH	2.00	714	2,400	0.298	N-S(2): 0.298
	LT	0.00	0	0	0.000 *	E-W(1): 0.169
Westbound	RT	1.00	301	1,200	0.251 *	E-W(2): 0.251 *
	TH	0.00	0	0	0.000	V/C: 0.638
	LT	1.00	203	1,200	0.169	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	929	2,400	0.387 *	ICU: 0.738
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.321
	TH	2.00	1,728	2,400	0.720 *	N-S(2): 0.720 *
	LT	0.00	0	0	0.000	E-W(1): 0.066
Westbound	RT	1.00	135	1,200	0.113 *	E-W(2): 0.113 *
	TH	0.00	0	0	0.000	V/C: 0.833
	LT	1.00	79	1,200	0.066	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	771	2,400	0.321	ICU: 0.933
	LT	0.00	0	0	0.000 *	LOS: E
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: The Districts
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.288 *
	TH	2.00	690	3,200	0.216	N-S(2): 0.217
	LT	1.00	91	1,600	0.057 *	E-W(1): 0.069 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.017
	TH	0.00	0	0	0.000	V/C: 0.357
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	62	0	0.000	ITS: 0.000
	TH	2.00	675	1,600	0.231 *	ICU: 0.457
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.10	11	160	0.068	
	TH	0.90	99	1,440	0.069 *	
	LT	1.00	27	1,600	0.017	

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): 0.379 *
	TH	2.00	1,115	3,200	0.348	N-S(2): 0.348
	LT	1.00	234	1,600	0.146 *	E-W(1): 0.438 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.817
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	126	0	0.000	ITS: 0.000
	TH	2.00	619	3,200	0.233 *	ICU: 0.917
	LT	0.00	0	0	0.000	LOS: E
Eastbound	RT	0.07	46	105	0.438	
	TH	0.93	655	1,495	0.438 *	
	LT	1.00	18	1,600	0.011	

* - Denotes critical movement

Project Title: The Districts
Intersection: 4 - S Main St & I-405 NB Off Ramp
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	86	0	0.000	N-S(1): 0.213
	TH	2.00	670	3,200	0.236 *	N-S(2): 0.255 *
	LT	0.00	0	0	0.000	E-W(1): 0.050
Westbound	RT	0.00	197	0	0.000	E-W(2): 0.208 *
	TH	2.00	388	1,600	0.208 *	V/C: 0.463
	LT	0.00	80	1,600	0.050	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	680	3,200	0.213	ICU: 0.563
	LT	1.00	30	1,600	0.019 *	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	62	0	0.000	N-S(1): 0.197
	TH	2.00	1,267	1,600	0.416 *	N-S(2): 0.432 *
	LT	0.00	1	1,600	0.001	E-W(1): 0.040
Westbound	RT	0.00	242	1,600	0.151 *	E-W(2): 0.151 *
	TH	2.00	124	1,600	0.078	V/C: 0.583
	LT	0.00	64	1,600	0.040	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	626	3,200	0.196	ICU: 0.683
	LT	1.00	25	1,600	0.016 *	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: The Districts
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1):	0.410 *
	TH	2.00	275	3,200	0.086	N-S(2):	0.104
	LT	1.00	124	1,600	0.078 *	E-W(1):	0.220
Westbound	RT	1.00	410	1,600	0.218 *	E-W(2):	0.258 *
	TH	1.00	217	1,600	0.136	V/C:	0.668
	LT	1.00	290	1,600	0.181	Lost Time:	0.100
Northbound	RT	0.00	277	0	0.000	ITS:	0.000
	TH	2.00	786	3,200	0.332 *	ICU:	0.768
	LT	1.00	29	1,600	0.018	LOS:	C
Eastbound	RT	0.00	16	0	0.000		
	TH	2.00	110	3,200	0.039		
	LT	1.00	64	1,600	0.040 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	87	1,600	0.045	N-S(1):	0.506 *
	TH	2.00	1,001	3,200	0.313	N-S(2):	0.316
	LT	1.00	429	1,600	0.268 *	E-W(1):	0.220 *
Westbound	RT	1.00	204	1,600	0.000	E-W(2):	0.127
	TH	1.00	175	1,600	0.109	V/C:	0.726
	LT	1.00	271	1,600	0.169 *	Lost Time:	0.100
Northbound	RT	0.00	217	0	0.000	ITS:	0.000
	TH	2.00	544	3,200	0.238 *	ICU:	0.826
	LT	1.00	4	1,600	0.003	LOS:	D
Eastbound	RT	0.00	14	0	0.000		
	TH	2.00	149	3,200	0.051 *		
	LT	1.00	29	1,600	0.018		

* - Denotes critical movement

Project Title: The Districts
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	450	1,600	0.234 *	N-S(1):	0.260
	TH	2.00	389	3,200	0.122	N-S(2):	0.360 *
	LT	1.00	43	1,600	0.027	E-W(1):	0.247
Westbound	RT	1.00	166	1,600	0.090	E-W(2):	0.393 *
	TH	2.00	957	3,200	0.299 *	V/C:	0.753
	LT	1.00	193	1,600	0.121	Lost Time:	0.100
Northbound	RT	1.00	340	1,600	0.152	ITS:	0.000
	TH	2.00	744	3,200	0.233	ICU:	0.853
	LT	1.00	202	1,600	0.126 *	LOS:	D
Eastbound	RT	1.00	101	1,600	0.000		
	TH	2.00	404	3,200	0.126		
	LT	1.00	150	1,600	0.094 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	233	1,600	0.127	N-S(1):	0.296 *
	TH	2.00	594	3,200	0.186	N-S(2):	0.220
	LT	1.00	202	1,600	0.126 *	E-W(1):	0.423 *
Westbound	RT	1.00	121	1,600	0.013	E-W(2):	0.256
	TH	2.00	697	3,200	0.218	V/C:	0.719
	LT	1.00	225	1,600	0.141 *	Lost Time:	0.100
Northbound	RT	1.00	384	1,600	0.170 *	ITS:	0.000
	TH	2.00	455	3,200	0.142	ICU:	0.819
	LT	1.00	55	1,600	0.034	LOS:	D
Eastbound	RT	1.00	169	1,600	0.088		
	TH	2.00	901	3,200	0.282 *		
	LT	1.00	60	1,600	0.038		

* - Denotes critical movement

Project Title: The Districts
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	130	0	0.000	N-S(1): 0.280 *
	TH	2.00	487	3,200	0.193	N-S(2): 0.242
	LT	1.00	55	1,600	0.034 *	E-W(1): 0.277
Westbound	RT	0.00	63	0	0.000	E-W(2): 0.347 *
	TH	3.00	1,164	4,800	0.256 *	V/C: 0.627
	LT	1.00	235	1,600	0.147	Lost Time: 0.100
Northbound	RT	0.00	248	0	0.000	ITS: 0.000
	TH	2.00	539	3,200	0.246 *	ICU: 0.727
	LT	1.00	78	1,600	0.049	LOS: C
Eastbound	RT	0.00	39	0	0.000	
	TH	3.00	583	4,800	0.130	
	LT	1.00	146	1,600	0.091 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	156	0	0.000	N-S(1): 0.315
	TH	2.00	779	3,200	0.292 *	N-S(2): 0.319 *
	LT	1.00	139	1,600	0.087	E-W(1): 0.430 *
Westbound	RT	0.00	62	0	0.000	E-W(2): 0.295
	TH	3.00	844	4,800	0.189	V/C: 0.749
	LT	1.00	254	1,600	0.159 *	Lost Time: 0.100
Northbound	RT	0.00	304	0	0.000	ITS: 0.000
	TH	2.00	424	3,200	0.228	ICU: 0.849
	LT	1.00	43	1,600	0.027 *	LOS: D
Eastbound	RT	0.00	120	0	0.000	
	TH	3.00	1,181	4,800	0.271 *	
	LT	1.00	169	1,600	0.106	

* - Denotes critical movement

Project Title: The Districts
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	219	0	0.000	N-S(1):	0.262
	TH	3.00	619	4,800	0.175 *	N-S(2):	0.344 *
	LT	2.00	171	2,560	0.067	E-W(1):	0.289
Westbound	RT	1.00	101	1,600	0.030	E-W(2):	0.430 *
	TH	2.00	831	3,200	0.260 *	V/C:	0.774
	LT	1.00	180	1,600	0.113	Lost Time:	0.100
Northbound	RT	1.00	139	1,600	0.031	ITS:	0.000
	TH	3.00	938	4,800	0.195	ICU:	0.874
	LT	1.00	270	1,600	0.169 *	LOS:	D
Eastbound	RT	1.00	84	1,600	0.000		
	TH	2.00	562	3,200	0.176		
	LT	1.00	272	1,600	0.170 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	270	0	0.000	N-S(1):	0.343
	TH	3.00	942	4,800	0.253 *	N-S(2):	0.379 *
	LT	2.00	347	2,560	0.136	E-W(1):	0.458 *
Westbound	RT	1.00	147	1,600	0.024	E-W(2):	0.339
	TH	2.00	667	3,200	0.208	V/C:	0.837
	LT	1.00	261	1,600	0.163 *	Lost Time:	0.100
Northbound	RT	1.00	210	1,600	0.050	ITS:	0.000
	TH	3.00	993	4,800	0.207	ICU:	0.937
	LT	1.00	202	1,600	0.126 *	LOS:	E
Eastbound	RT	1.00	252	1,600	0.094		
	TH	2.00	943	3,200	0.295 *		
	LT	1.00	210	1,600	0.131		

* - Denotes critical movement

Project Title: The Districts
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	179	1,600	0.112	N-S(1):	0.223
	TH	2.00	495	3,200	0.155 *	N-S(2):	0.419 *
	LT	0.00	0	0	0.000	E-W(1):	0.152
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.355 *
	TH	0.00	0	0	0.000 *	V/C:	0.774
	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	713	3,200	0.223	ICU:	0.874
	LT	2.00	677	2,560	0.264 *	LOS:	D
Eastbound	RT	0.70	319	1,124	0.152		
	TH	0.00	0	0	0.000		
	LT	1.30	589	1,661	0.355 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	239	1,600	0.149	N-S(1):	0.149
	TH	3.00	768	4,800	0.160 *	N-S(2):	0.413 *
	LT	0.00	0	0	0.000	E-W(1):	0.050
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.221 *
	TH	0.00	0	0	0.000 *	V/C:	0.634
	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	476	3,200	0.149	ICU:	0.734
	LT	2.00	648	2,560	0.253 *	LOS:	C
Eastbound	RT	0.69	195	1,104	0.050		
	TH	0.00	0	0	0.000		
	LT	1.31	370	1,676	0.221 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 14 - Hamilton Ave & W Torrance Blvd
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.49	589	2,389	0.215	N-S(1):	0.247 *
	TH	0.00	0	0	0.000	N-S(2):	0.215
	LT	0.51	200	811	0.247 *	E-W(1):	0.326
Westbound	RT	0.00	84	0	0.000	E-W(2):	0.409 *
	TH	2.00	1,022	3,200	0.346 *	V/C:	0.656
	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:	0.756
	LT	0.00	0	0	0.000	LOS:	C
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	1,043	3,200	0.326		
	LT	1.00	100	1,600	0.063 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.13	249	1,803	0.073	N-S(1):	0.138 *
	TH	0.00	0	0	0.000	N-S(2):	0.073
	LT	0.87	193	1,397	0.138 *	E-W(1):	0.405 *
Westbound	RT	0.00	238	0	0.000	E-W(2):	0.398
	TH	2.00	616	3,200	0.267	V/C:	0.543
	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:	0.643
	LT	0.00	0	0	0.000	LOS:	B
Eastbound	RT	0.00	0	0	0.000		
	TH	2.00	1,296	3,200	0.405 *		
	LT	1.00	210	1,600	0.131		

* - Denotes critical movement

Project Title: The Districts
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	439	1,600	0.112	N-S(1):	0.245 *
	TH	2.00	341	3,200	0.107	N-S(2):	0.227
	LT	1.00	57	1,600	0.036 *	E-W(1):	0.475 *
Westbound	RT	1.00	160	1,600	0.082	E-W(2):	0.000
	TH	2.00	484	3,200	0.151 *	V/C:	0.720
	LT	1.00	61	1,600	0.038	Lost Time:	0.100
Northbound	RT	0.00	60	0	0.000	ITS:	0.000
	TH	2.00	610	3,200	0.209 *	ICU:	0.820
	LT	1.00	184	1,600	0.115	LOS:	D
Eastbound	RT	0.00	164	0	0.000		
	TH	1.51	463	2,417	0.259		
	LT	1.49	618	1,906	0.324 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	381	1,600	0.043	N-S(1):	0.199 *
	TH	2.00	455	3,200	0.142	N-S(2):	0.197
	LT	1.00	118	1,600	0.074 *	E-W(1):	0.510 *
Westbound	RT	1.00	168	1,600	0.068	E-W(2):	0.000
	TH	2.00	383	3,200	0.120 *	V/C:	0.709
	LT	1.00	49	1,600	0.031	Lost Time:	0.100
Northbound	RT	0.00	52	0	0.000	ITS:	0.000
	TH	2.00	349	3,200	0.125 *	ICU:	0.809
	LT	1.00	88	1,600	0.055	LOS:	D
Eastbound	RT	0.00	163	0	0.000		
	TH	1.76	715	2,817	0.312		
	LT	1.24	618	1,586	0.390 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 16 - S Main St & W Torrance Blvd
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	263	1,600	0.076	N-S(1):	0.203
	TH	2.00	479	3,200	0.150 *	N-S(2):	0.298 *
	LT	1.00	12	1,600	0.008	E-W(1):	0.255 *
Westbound	RT	0.00	36	0	0.000	E-W(2):	0.000
	TH	1.00	77	1,600	0.077 *	V/C:	0.553
	LT	0.00	10	1,600	0.006	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	614	3,200	0.195	ICU:	0.653
	LT	2.00	379	2,560	0.148 *	LOS:	B
Eastbound	RT	1.00	235	1,600	0.073		
	TH	0.08	24	135	0.178		
	LT	0.92	260	1,465	0.178 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	304	1,600	0.074	N-S(1):	0.174
	TH	2.00	788	3,200	0.246 *	N-S(2):	0.358 *
	LT	1.00	46	1,600	0.029	E-W(1):	0.321 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.000
	TH	1.00	44	1,600	0.051 *	V/C:	0.679
	LT	0.00	11	1,600	0.007	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	456	3,200	0.145	ICU:	0.779
	LT	2.00	287	2,560	0.112 *	LOS:	C
Eastbound	RT	1.00	521	1,600	0.270 *		
	TH	0.19	72	311	0.231		
	LT	0.81	298	1,289	0.231		

* - Denotes critical movement

Project Title: The Districts
Intersection: 18 - S Avalon Blvd & I-405 SB Ramps
Description: Cumulative Base

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, EBR,		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	262	1,600	0.000	N-S(1): 0.378 *
	TH	2.00	715	3,200	0.223	N-S(2): 0.223
	LT	0.00	0	0	0.000 *	E-W(1): 0.001
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.185 *
	TH	0.00	0	0	0.000 *	V/C: 0.563
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	125	0	0.000	ITS: 0.000
	TH	2.00	1,083	3,200	0.378 *	ICU: 0.663
	LT	0.00	0	0	0.000	LOS: B
Eastbound	RT	1.00	478	1,600	0.000	
	TH	2.00	3	3,200	0.001	
	LT	2.00	473	2,560	0.185 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	400	1,600	0.000	N-S(1): 0.443 *
	TH	2.00	991	3,200	0.310	N-S(2): 0.310
	LT	0.00	0	0	0.000 *	E-W(1): 0.041
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.069 *
	TH	0.00	0	0	0.000 *	V/C: 0.512
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	195	0	0.000	ITS: 0.000
	TH	2.00	1,221	3,200	0.443 *	ICU: 0.612
	LT	0.00	0	0	0.000	LOS: B
Eastbound	RT	1.00	292	1,600	0.000	
	TH	2.00	132	3,200	0.041	
	LT	2.00	177	2,560	0.069 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 19 - S Avalon Blvd & I-405 NB Ramps
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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: WBR

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	229	1,600	0.143	N-S(1): 0.390 * N-S(2): 0.312 E-W(1): 0.037 * E-W(2): 0.030
	TH	3.00	842	4,800	0.175	
	LT	0.00	0	0	0.000 *	
Westbound	RT	1.00	560	1,600	0.000	V/C: 0.427 Lost Time: 0.100 ITS: 0.000
	TH	0.04	2	67	0.030	
	LT	1.96	93	2,506	0.037 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.527
	TH	2.00	1,247	3,200	0.390 *	
	LT	2.00	350	2,560	0.137	
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	1.00	521	1,600	0.326 *	N-S(1): 0.309 N-S(2): 0.482 * E-W(1): 0.037 * E-W(2): 0.000
	TH	3.00	1,301	4,800	0.271	
	LT	0.00	0	0	0.000	
Westbound	RT	1.00	410	1,600	0.000	V/C: 0.519 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	94	2,560	0.037 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.619
	TH	2.00	988	3,200	0.309	
	LT	2.00	400	2,560	0.156 *	
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: The Districts
Intersection: 20 - S Main St & E 213th St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.348 *
	TH	2.00	561	3,200	0.175	N-S(2): 0.178
	LT	1.00	124	1,600	0.078 *	E-W(1): 0.383 *
Westbound	RT	0.51	312	814	0.344	E-W(2): 0.344
	TH	0.00	0	0	0.000	V/C: 0.731
	LT	0.49	301	786	0.383 *	Lost Time: 0.100
Northbound	RT	0.00	166	0	0.000	ITS: 0.000
	TH	2.00	694	1,600	0.270 *	ICU: 0.831
	LT	0.00	4	1,600	0.003	LOS: D
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	0	0	0.000	N-S(1): 0.480 *
	TH	2.00	909	3,200	0.284	N-S(2): 0.287
	LT	1.00	371	1,600	0.232 *	E-W(1): 0.254 *
Westbound	RT	0.42	171	674	0.138	E-W(2): 0.138
	TH	0.00	0	0	0.000	V/C: 0.734
	LT	0.58	235	926	0.254 *	Lost Time: 0.100
Northbound	RT	0.00	271	0	0.000	ITS: 0.000
	TH	2.00	516	1,600	0.248 *	ICU: 0.834
	LT	0.00	5	1,600	0.003	LOS: D
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: The Districts
Intersection: 21 - S Avalon Blvd & E 213th St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	178	0	0.000	N-S(1):	0.252
	TH	3.00	923	4,800	0.229 *	N-S(2):	0.297 *
	LT	1.00	60	1,600	0.038	E-W(1):	0.264 *
Westbound	RT	0.00	68	0	0.000	E-W(2):	0.250
	TH	2.00	243	3,200	0.097	V/C:	0.561
	LT	1.00	127	1,600	0.079 *	Lost Time:	0.100
Northbound	RT	0.00	139	0	0.000	ITS:	0.000
	TH	3.00	888	4,800	0.214	ICU:	0.661
	LT	1.00	108	1,600	0.068 *	LOS:	B
Eastbound	RT	0.30	88	476	0.151		
	TH	0.70	208	1,124	0.185 *		
	LT	1.00	244	1,600	0.153		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	189	0	0.000	N-S(1):	0.304
	TH	3.00	978	4,800	0.243 *	N-S(2):	0.336 *
	LT	1.00	93	1,600	0.058	E-W(1):	0.340 *
Westbound	RT	0.00	75	0	0.000	E-W(2):	0.254
	TH	2.00	212	3,200	0.090	V/C:	0.676
	LT	1.00	126	1,600	0.079 *	Lost Time:	0.100
Northbound	RT	0.00	130	0	0.000	ITS:	0.000
	TH	3.00	1,053	4,800	0.246	ICU:	0.776
	LT	1.00	148	1,600	0.093 *	LOS:	C
Eastbound	RT	0.27	113	434	0.214		
	TH	0.73	304	1,166	0.261 *		
	LT	1.00	263	1,600	0.164		

* - Denotes critical movement

Project Title: The Districts
Intersection: 22 - S Vermont Ave & W Carson St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	176	1,600	0.063	N-S(1):	0.322 *
	TH	2.00	437	3,200	0.137	N-S(2):	0.263
	LT	1.00	97	1,600	0.061 *	E-W(1):	0.423
Westbound	RT	1.00	137	1,600	0.055	E-W(2):	0.496 *
	TH	2.00	1,286	3,200	0.402 *	V/C:	0.818
	LT	1.00	326	1,600	0.204	Lost Time:	0.100
Northbound	RT	1.00	169	1,600	0.004	ITS:	0.000
	TH	2.00	836	3,200	0.261 *	ICU:	0.918
	LT	1.00	201	1,600	0.126	LOS:	E
Eastbound	RT	1.00	91	1,600	0.000		
	TH	2.00	701	3,200	0.219		
	LT	1.00	151	1,600	0.094 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	231	1,600	0.093	N-S(1):	0.261
	TH	2.00	759	3,200	0.237 *	N-S(2):	0.313 *
	LT	1.00	185	1,600	0.116	E-W(1):	0.361
Westbound	RT	1.00	104	1,600	0.007	E-W(2):	0.365 *
	TH	2.00	840	3,200	0.263 *	V/C:	0.678
	LT	1.00	107	1,600	0.067	Lost Time:	0.100
Northbound	RT	1.00	201	1,600	0.092	ITS:	0.000
	TH	2.00	464	3,200	0.145	ICU:	0.778
	LT	1.00	122	1,600	0.076 *	LOS:	C
Eastbound	RT	1.00	216	1,600	0.097		
	TH	2.00	940	3,200	0.294		
	LT	1.00	163	1,600	0.102 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 23 - Figueroa St & W Carson St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	323	0	0.000	N-S(1):	0.232
	TH	2.00	379	3,200	0.219 *	N-S(2):	0.358 *
	LT	2.00	45	2,560	0.018	E-W(1):	0.235
Westbound	RT	0.00	47	0	0.000	E-W(2):	0.255 *
	TH	2.00	472	3,200	0.162 *	V/C:	0.613
	LT	1.00	38	1,600	0.024	Lost Time:	0.100
Northbound	RT	0.00	151	0	0.000	ITS:	0.000
	TH	2.00	535	3,200	0.214	ICU:	0.713
	LT	2.00	357	2,560	0.139 *	LOS:	C
Eastbound	RT	1.00	449	1,600	0.211		
	TH	2.00	349	3,200	0.109		
	LT	1.00	149	1,600	0.093 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	174	0	0.000	N-S(1):	0.187
	TH	2.00	446	3,200	0.194 *	N-S(2):	0.287 *
	LT	2.00	91	2,560	0.036	E-W(1):	0.316 *
Westbound	RT	0.00	34	0	0.000	E-W(2):	0.231
	TH	2.00	435	3,200	0.147	V/C:	0.603
	LT	1.00	62	1,600	0.039 *	Lost Time:	0.100
Northbound	RT	0.00	125	0	0.000	ITS:	0.000
	TH	2.00	357	3,200	0.151	ICU:	0.703
	LT	2.00	237	2,560	0.093 *	LOS:	C
Eastbound	RT	1.00	518	1,600	0.277 *		
	TH	2.00	592	3,200	0.185		
	LT	1.00	135	1,600	0.084		

* - Denotes critical movement

Project Title: The Districts
Intersection: 24 - S Main St & W Carson St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.217 *
	TH	3.00	546	4,800	0.130	N-S(2): 0.215
	LT	1.00	57	1,600	0.036 *	E-W(1): 0.142
Westbound	RT	1.00	58	1,600	0.018	E-W(2): 0.164 *
	TH	2.00	353	3,200	0.110 *	V/C: 0.381
	LT	1.00	52	1,600	0.033	Lost Time: 0.100
Northbound	RT	0.00	118	0	0.000	ITS: 0.000
	TH	3.00	750	4,800	0.181 *	ICU: 0.481
	LT	1.00	136	1,600	0.085	LOS: A
Eastbound	RT	1.00	102	1,600	0.021	
	TH	2.00	350	3,200	0.109	
	LT	1.00	87	1,600	0.054 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	112	0	0.000	N-S(1): 0.238
	TH	3.00	796	4,800	0.189 *	N-S(2): 0.291 *
	LT	1.00	165	1,600	0.103	E-W(1): 0.232 *
Westbound	RT	1.00	53	1,600	0.000	E-W(2): 0.187
	TH	2.00	362	3,200	0.113	V/C: 0.523
	LT	1.00	105	1,600	0.066 *	Lost Time: 0.100
Northbound	RT	0.00	100	0	0.000	ITS: 0.000
	TH	3.00	549	4,800	0.135	ICU: 0.623
	LT	1.00	163	1,600	0.102 *	LOS: B
Eastbound	RT	1.00	43	1,600	0.000	
	TH	2.00	530	3,200	0.166 *	
	LT	1.00	118	1,600	0.074	

* - Denotes critical movement

Project Title: The Districts
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	56	0	0.000	N-S(1):	0.447 *
	TH	3.00	774	4,800	0.173	N-S(2):	0.215
	LT	1.00	197	1,600	0.123 *	E-W(1):	0.325 *
Westbound	RT	0.00	105	0	0.000	E-W(2):	0.195
	TH	2.00	350	3,200	0.142	V/C:	0.772
	LT	2.00	395	2,560	0.154 *	Lost Time:	0.100
Northbound	RT	0.00	518	1,600	0.324 *	ITS:	0.000
	TH	3.00	752	3,200	0.235	ICU:	0.872
	LT	1.00	67	1,600	0.042	LOS:	D
Eastbound	RT	0.00	67	0	0.000		
	TH	2.00	480	3,200	0.171 *		
	LT	2.00	135	2,560	0.053		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	101	0	0.000	N-S(1):	0.474 *
	TH	3.00	822	4,800	0.192	N-S(2):	0.253
	LT	1.00	280	1,600	0.175 *	E-W(1):	0.377 *
Westbound	RT	0.00	113	0	0.000	E-W(2):	0.243
	TH	2.00	434	3,200	0.171	V/C:	0.851
	LT	2.00	392	2,560	0.153 *	Lost Time:	0.100
Northbound	RT	0.00	478	1,600	0.299 *	ITS:	0.000
	TH	3.00	781	3,200	0.244	ICU:	0.951
	LT	1.00	97	1,600	0.061	LOS:	E
Eastbound	RT	0.00	73	0	0.000		
	TH	2.00	644	3,200	0.224 *		
	LT	2.00	185	2,560	0.072		

* - Denotes critical movement

Project Title: The Districts
Intersection: 26 - SR 405 SB Ramps & E Carson St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	10	0	0.000	N-S(1): 0.107 *
	TH	0.00	0	0	0.000	N-S(2): 0.064
	LT	0.00	0	0	0.000 *	E-W(1): 0.445 *
Westbound	RT	0.00	20	0	0.000	E-W(2): 0.235
	TH	3.00	1,089	4,800	0.231	V/C: 0.552
	LT	1.00	111	1,600	0.069 *	Lost Time: 0.100
Northbound	RT	1.00	227	1,600	0.107 *	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.652
	LT	1.00	103	1,600	0.064	LOS: B
Eastbound	RT	1.00	653	1,600	0.376 *	
	TH	2.00	631	3,200	0.197	
	LT	1.00	7	1,600	0.004	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	7	0	0.000	N-S(1): 0.003
	TH	0.00	0	0	0.000 *	N-S(2): 0.033 *
	LT	0.00	0	0	0.000	E-W(1): 0.571 *
Westbound	RT	0.00	22	0	0.000	E-W(2): 0.230
	TH	3.00	1,038	4,800	0.221	V/C: 0.604
	LT	1.00	109	1,600	0.068 *	Lost Time: 0.100
Northbound	RT	1.00	59	1,600	0.003	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.704
	LT	1.00	52	1,600	0.033 *	LOS: C
Eastbound	RT	1.00	831	1,600	0.503 *	
	TH	2.00	1,082	3,200	0.338	
	LT	1.00	15	1,600	0.009	

* - Denotes critical movement

Project Title: The Districts
Intersection: 27 - SR 405 NB Ramps & E Carson St
Description: Cumulative Base

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	443	1,600	0.000	N-S(1):	0.030 *
	TH	0.41	15	649	0.023 *	N-S(2):	0.030 *
	LT	0.59	22	951	0.023 *	E-W(1):	0.243
Westbound	RT	1.00	256	1,600	0.148	E-W(2):	0.255 *
	TH	2.00	788	3,200	0.246 *	V/C:	0.285
	LT	1.00	14	1,600	0.009	Lost Time:	0.100
Northbound	RT	1.00	4	1,600	0.000	ITS:	0.000
	TH	0.36	4	582	0.007 *	ICU:	0.385
	LT	0.64	7	1,018	0.007 *	LOS:	A
Eastbound	RT	0.00	40	0	0.000		
	TH	2.00	710	3,200	0.234		
	LT	1.00	15	1,600	0.009 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	440	1,600	0.000	N-S(1):	0.065 *
	TH	0.17	8	272	0.029 *	N-S(2):	0.065 *
	LT	0.83	39	1,328	0.029 *	E-W(1):	0.332 *
Westbound	RT	1.00	393	1,600	0.231	E-W(2):	0.316
	TH	2.00	697	3,200	0.218	V/C:	0.397
	LT	1.00	24	1,600	0.015 *	Lost Time:	0.100
Northbound	RT	1.00	21	1,600	0.006	ITS:	0.000
	TH	0.37	21	589	0.036 *	ICU:	0.497
	LT	0.63	36	1,011	0.036 *	LOS:	A
Eastbound	RT	0.00	36	0	0.000		
	TH	2.00	978	3,200	0.317 *		
	LT	1.00	136	1,600	0.085		

* - Denotes critical movement

FUTURE PLUS PROJECT - ICU

Project Title: The Districts
Intersection: 2 - Figueroa St & I-405 NB Off Ramp
Description: Cumulative Base plus Project

Thru Lane: 1200 vph
 Left Lane: 1200 vph
 Double Lt Penalty: 20 %
 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): 0.398 *
	TH	2.00	744	2,400	0.310	N-S(2): 0.310
	LT	0.00	0	0	0.000 *	E-W(1): 0.169
Westbound	RT	1.00	301	1,200	0.251 *	E-W(2): 0.251 *
	TH	0.00	0	0	0.000	V/C: 0.649
	LT	1.00	203	1,200	0.169	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	955	2,400	0.398 *	ICU: 0.749
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.334
	TH	2.00	1,766	2,400	0.736 *	N-S(2): 0.736 *
	LT	0.00	0	0	0.000	E-W(1): 0.066
Westbound	RT	1.00	135	1,200	0.113 *	E-W(2): 0.113 *
	TH	0.00	0	0	0.000	V/C: 0.849
	LT	1.00	79	1,200	0.066	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	802	2,400	0.334	ICU: 0.949
	LT	0.00	0	0	0.000 *	LOS: E
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: The Districts
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.317 *
	TH	2.00	787	3,200	0.246	N-S(2): 0.247
	LT	1.00	91	1,600	0.057 *	E-W(1): 0.069 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.017
	TH	0.00	0	0	0.000	V/C: 0.386
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	78	0	0.000	ITS: 0.000
	TH	2.00	753	1,600	0.260 *	ICU: 0.486
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.10	11	160	0.068	
	TH	0.90	99	1,440	0.069 *	
	LT	1.00	27	1,600	0.017	

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): 0.417 *
	TH	2.00	1,259	3,200	0.393	N-S(2): 0.393
	LT	1.00	234	1,600	0.146 *	E-W(1): 0.438 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.855
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	144	0	0.000	ITS: 0.000
	TH	2.00	721	3,200	0.271 *	ICU: 0.955
	LT	0.00	0	0	0.000	LOS: E
Eastbound	RT	0.07	46	105	0.438	
	TH	0.93	655	1,495	0.438 *	
	LT	1.00	18	1,600	0.011	

* - Denotes critical movement

Project Title: The Districts
Intersection: 4 - S Main St & I-405 NB Off Ramp
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	86	0	0.000	N-S(1): 0.237
	TH	2.00	758	3,200	0.264 *	N-S(2): 0.283 *
	LT	0.00	0	0	0.000	E-W(1): 0.056
Westbound	RT	0.00	197	0	0.000	E-W(2): 0.211 *
	TH	2.00	388	1,600	0.211 *	V/C: 0.494
	LT	0.00	89	1,600	0.056	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	758	3,200	0.237	ICU: 0.594
	LT	1.00	30	1,600	0.019 *	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	62	0	0.000	N-S(1): 0.229
	TH	2.00	1,389	1,600	0.454 *	N-S(2): 0.470 *
	LT	0.00	1	1,600	0.001	E-W(1): 0.054
Westbound	RT	0.00	242	1,600	0.151 *	E-W(2): 0.151 *
	TH	2.00	124	1,600	0.078	V/C: 0.621
	LT	0.00	86	1,600	0.054	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	728	3,200	0.228	ICU: 0.721
	LT	1.00	25	1,600	0.016 *	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: The Districts
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1): 0.427 *
	TH	2.00	275	3,200	0.086	N-S(2): 0.104
	LT	1.00	153	1,600	0.095 *	E-W(1): 0.320 *
Westbound	RT	1.00	437	1,600	0.225	E-W(2): 0.265
	TH	1.00	243	1,600	0.152	V/C: 0.747
	LT	1.00	433	1,600	0.271 *	Lost Time: 0.100
Northbound	RT	0.00	277	0	0.000	ITS: 0.000
	TH	2.00	786	3,200	0.332 *	ICU: 0.847
	LT	1.00	29	1,600	0.018	LOS: D
Eastbound	RT	0.00	16	0	0.000	
	TH	2.00	140	3,200	0.049 *	
	LT	1.00	64	1,600	0.040	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	87	1,600	0.045	N-S(1): 0.535 *
	TH	2.00	1,001	3,200	0.313	N-S(2): 0.316
	LT	1.00	475	1,600	0.297 *	E-W(1): 0.327 *
Westbound	RT	1.00	244	1,600	0.004	E-W(2): 0.147
	TH	1.00	206	1,600	0.129	V/C: 0.862
	LT	1.00	422	1,600	0.264 *	Lost Time: 0.100
Northbound	RT	0.00	217	0	0.000	ITS: 0.000
	TH	2.00	544	3,200	0.238 *	ICU: 0.962
	LT	1.00	4	1,600	0.003	LOS: E
Eastbound	RT	0.00	14	0	0.000	
	TH	2.00	187	3,200	0.063 *	
	LT	1.00	29	1,600	0.018	

* - Denotes critical movement

Project Title: The Districts
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	450	1,600	0.234 *	N-S(1):	0.278
	TH	2.00	389	3,200	0.122	N-S(2):	0.360 *
	LT	1.00	73	1,600	0.045	E-W(1):	0.554 *
Westbound	RT	1.00	192	1,600	0.097	E-W(2):	0.470
	TH	2.00	1,203	3,200	0.376	V/C:	0.914
	LT	1.00	519	1,600	0.324 *	Lost Time:	0.100
Northbound	RT	1.00	384	1,600	0.078	ITS:	0.000
	TH	2.00	744	3,200	0.233	ICU:	1.014
	LT	1.00	202	1,600	0.126 *	LOS:	F
Eastbound	RT	1.00	101	1,600	0.000		
	TH	2.00	737	3,200	0.230 *		
	LT	1.00	150	1,600	0.094		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	233	1,600	0.127	N-S(1):	0.292 *
	TH	2.00	594	3,200	0.186	N-S(2):	0.220
	LT	1.00	240	1,600	0.150 *	E-W(1):	0.891 *
Westbound	RT	1.00	152	1,600	0.020	E-W(2):	0.348
	TH	2.00	993	3,200	0.310	V/C:	1.183
	LT	1.00	687	1,600	0.430 *	Lost Time:	0.100
Northbound	RT	1.00	467	1,600	0.077	ITS:	0.000
	TH	2.00	455	3,200	0.142 *	ICU:	1.283
	LT	1.00	55	1,600	0.034	LOS:	F
Eastbound	RT	1.00	169	1,600	0.088		
	TH	2.00	1,475	3,200	0.461 *		
	LT	1.00	60	1,600	0.038		

* - Denotes critical movement

Project Title: The Districts
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	130	0	0.000	N-S(1):	0.323 *
	TH	2.00	554	3,200	0.214	N-S(2):	0.299
	LT	1.00	85	1,600	0.053 *	E-W(1):	0.369
Westbound	RT	0.00	79	0	0.000	E-W(2):	0.462 *
	TH	3.00	1,703	4,800	0.371 *	V/C:	0.785
	LT	1.00	249	1,600	0.155	Lost Time:	0.100
Northbound	RT	0.00	248	0	0.000	ITS:	0.000
	TH	2.00	617	3,200	0.270 *	ICU:	0.885
	LT	1.00	137	1,600	0.085	LOS:	D
Eastbound	RT	0.00	39	0	0.000		
	TH	3.00	989	4,800	0.214		
	LT	1.00	146	1,600	0.091 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	156	0	0.000	N-S(1):	0.390 *
	TH	2.00	852	3,200	0.315	N-S(2):	0.386
	LT	1.00	210	1,600	0.131 *	E-W(1):	0.578 *
Westbound	RT	0.00	80	0	0.000	E-W(2):	0.448
	TH	3.00	1,562	4,800	0.342	V/C:	0.968
	LT	1.00	260	1,600	0.162 *	Lost Time:	0.100
Northbound	RT	0.00	304	0	0.000	ITS:	0.000
	TH	2.00	526	3,200	0.259 *	ICU:	1.068
	LT	1.00	114	1,600	0.071	LOS:	F
Eastbound	RT	0.00	120	0	0.000		
	TH	3.00	1,876	4,800	0.416 *		
	LT	1.00	169	1,600	0.106		

* - Denotes critical movement

Project Title: The Districts
Intersection: 9 - Stamps Dr & Del Amo Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 ITS: 0 %
 OLA Movements : NBR,
 FF Movements:

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

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.79	68	2,863	0.018	N-S(1):	0.177 *
	TH	0.21	8	337	0.024 *	N-S(2):	0.000
	LT	1.00	25	1,600	0.016	E-W(1):	0.265
Westbound	RT	0.00	7	0	0.000	E-W(2):	0.303 *
	TH	3.00	1,394	4,800	0.292 *	V/C:	0.480
	LT	2.00	188	2,560	0.074	Lost Time:	0.100
Northbound	RT	1.00	148	1,600	0.019	ITS:	0.000
	TH	0.01	1	8	0.122	ICU:	0.580
	LT	2.99	586	3,833	0.153 *	LOS:	A
Eastbound	RT	1.00	415	1,600	0.183		
	TH	3.00	917	4,800	0.191		
	LT	1.00	17	1,600	0.011 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.81	28	2,890	0.000	N-S(1):	0.214 *
	TH	0.19	3	310	0.010 *	N-S(2):	0.000
	LT	1.00	10	1,600	0.006	E-W(1):	0.455 *
Westbound	RT	0.00	23	0	0.000	E-W(2):	0.273
	TH	3.00	1,131	4,800	0.240	V/C:	0.669
	LT	2.00	316	2,560	0.123 *	Lost Time:	0.100
Northbound	RT	1.00	215	1,600	0.011	ITS:	0.000
	TH	0.01	3	18	0.163	ICU:	0.769
	LT	2.99	781	3,825	0.204 *	LOS:	C
Eastbound	RT	1.00	665	1,600	0.314		
	TH	3.00	1,593	4,800	0.332 *		
	LT	1.00	52	1,600	0.033		

* - Denotes critical movement

Project Title: The Districts
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	268	0	0.000	N-S(1):	0.262
	TH	3.00	619	4,800	0.185 *	N-S(2):	0.377 *
	LT	2.00	171	2,560	0.067	E-W(1):	0.309
Westbound	RT	1.00	101	1,600	0.030	E-W(2):	0.480 *
	TH	2.00	908	3,200	0.284 *	V/C:	0.857
	LT	1.00	180	1,600	0.113	Lost Time:	0.100
Northbound	RT	1.00	139	1,600	0.031	ITS:	0.000
	TH	3.00	938	4,800	0.195	ICU:	0.957
	LT	1.00	307	1,600	0.192 *	LOS:	E
Eastbound	RT	1.00	157	1,600	0.002		
	TH	2.00	626	3,200	0.196		
	LT	1.00	314	1,600	0.196 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	343	0	0.000	N-S(1):	0.343
	TH	3.00	942	4,800	0.268 *	N-S(2):	0.449 *
	LT	2.00	347	2,560	0.136	E-W(1):	0.490 *
Westbound	RT	1.00	147	1,600	0.024	E-W(2):	0.415
	TH	2.00	782	3,200	0.244	V/C:	0.939
	LT	1.00	261	1,600	0.163 *	Lost Time:	0.100
Northbound	RT	1.00	210	1,600	0.050	ITS:	0.000
	TH	3.00	993	4,800	0.207	ICU:	1.039
	LT	1.00	289	1,600	0.181 *	LOS:	F
Eastbound	RT	1.00	282	1,600	0.086		
	TH	2.00	1,045	3,200	0.327 *		
	LT	1.00	274	1,600	0.171		

* - Denotes critical movement

Project Title: The Districts
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	490	1,600	0.306 *	N-S(1): 0.223
	TH	2.00	510	3,200	0.159	N-S(2): 0.570 *
	LT	0.00	0	0	0.000	E-W(1): 0.175
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.384 *
	TH	0.00	0	0	0.000 *	V/C: 0.954
	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	713	3,200	0.223	ICU: 1.054
	LT	2.00	677	2,560	0.264 *	LOS: F
Eastbound	RT	0.71	351	1,141	0.175	
	TH	0.00	0	0	0.000	
	LT	1.29	633	1,647	0.384 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	678	1,600	0.424 *	N-S(1): 0.149
	TH	3.00	792	4,800	0.165	N-S(2): 0.677 *
	LT	0.00	0	0	0.000	E-W(1): 0.092
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.273 *
	TH	0.00	0	0	0.000 *	V/C: 0.950
	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	476	3,200	0.149	ICU: 1.050
	LT	2.00	648	2,560	0.253 *	LOS: F
Eastbound	RT	0.70	245	1,124	0.092	
	TH	0.00	0	0	0.000	
	LT	1.30	453	1,661	0.273 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 13 - Main St & Lenardo Dr
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.324 * N-S(2): 0.242 E-W(1): 0.034 E-W(2): 0.067 *
	TH	2.00	776	3,200	0.242	
	LT	1.00	86	1,600	0.054 *	
Westbound	RT	1.00	150	1,600	0.067 *	V/C: 0.391 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	54	1,600	0.034	
Northbound	RT	1.00	331	1,600	0.207	ICU: 0.491
	TH	2.00	865	3,200	0.270 *	
	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): 0.387 * N-S(2): 0.362 E-W(1): 0.073 E-W(2): 0.094 *
	TH	2.00	1,158	3,200	0.362	
	LT	1.00	104	1,600	0.065 *	
Westbound	RT	1.00	203	1,600	0.094 *	V/C: 0.481 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	117	1,600	0.073	
Northbound	RT	1.00	515	1,600	0.322 *	ICU: 0.581
	TH	2.00	774	3,200	0.242	
	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 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 14 - Hamilton Ave & W Torrance Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.49	589	2,389	0.215	N-S(1): 0.247 *
	TH	0.00	0	0	0.000	N-S(2): 0.215
	LT	0.51	200	811	0.247 *	E-W(1): 0.346
Westbound	RT	0.00	105	0	0.000	E-W(2): 0.422 *
	TH	2.00	1,043	3,200	0.359 *	V/C: 0.669
	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: 0.769
	LT	0.00	0	0	0.000	LOS: C
Eastbound	RT	0.00	0	0	0.000	
	TH	2.00	1,108	3,200	0.346	
	LT	1.00	100	1,600	0.063 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.13	249	1,803	0.073	N-S(1): 0.138 *
	TH	0.00	0	0	0.000	N-S(2): 0.073
	LT	0.87	193	1,397	0.138 *	E-W(1): 0.436 *
Westbound	RT	0.00	287	0	0.000	E-W(2): 0.425
	TH	2.00	655	3,200	0.294	V/C: 0.574
	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: 0.674
	LT	0.00	0	0	0.000	LOS: B
Eastbound	RT	0.00	0	0	0.000	
	TH	2.00	1,395	3,200	0.436 *	
	LT	1.00	210	1,600	0.131	

* - Denotes critical movement

Project Title: The Districts
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	439	1,600	0.104	N-S(1): 0.272 *
	TH	2.00	356	3,200	0.111	N-S(2): 0.226
	LT	1.00	89	1,600	0.055 *	E-W(1): 0.505 *
Westbound	RT	1.00	160	1,600	0.072	E-W(2): 0.000
	TH	2.00	526	3,200	0.164 *	V/C: 0.777
	LT	1.00	66	1,600	0.041	Lost Time: 0.100
Northbound	RT	0.00	84	0	0.000	ITS: 0.000
	TH	2.00	610	3,200	0.217 *	ICU: 0.877
	LT	1.00	184	1,600	0.115	LOS: D
Eastbound	RT	0.00	164	0	0.000	
	TH	1.58	528	2,535	0.273	
	LT	1.42	618	1,812	0.341 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	381	1,600	0.030	N-S(1): 0.239 *
	TH	2.00	479	3,200	0.150	N-S(2): 0.205
	LT	1.00	168	1,600	0.105 *	E-W(1): 0.562 *
Westbound	RT	1.00	168	1,600	0.052	E-W(2): 0.000
	TH	2.00	471	3,200	0.147 *	V/C: 0.801
	LT	1.00	51	1,600	0.032	Lost Time: 0.100
Northbound	RT	0.00	79	0	0.000	ITS: 0.000
	TH	2.00	349	3,200	0.134 *	ICU: 0.901
	LT	1.00	88	1,600	0.055	LOS: E
Eastbound	RT	0.00	163	0	0.000	
	TH	1.84	814	2,940	0.332	
	LT	1.16	618	1,488	0.415 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 16 - S Main St & W Torrance Blvd
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	309	1,600	0.067	N-S(1):	0.262
	TH	2.00	488	3,200	0.153 *	N-S(2):	0.301 *
	LT	1.00	12	1,600	0.008	E-W(1):	0.330 *
Westbound	RT	0.00	36	0	0.000	E-W(2):	0.000
	TH	1.00	77	1,600	0.077 *	V/C:	0.631
	LT	0.00	10	1,600	0.006	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	805	3,200	0.254	ICU:	0.731
	LT	2.00	379	2,560	0.148 *	LOS:	C
Eastbound	RT	1.00	235	1,600	0.073		
	TH	0.06	24	95	0.253		
	LT	0.94	381	1,505	0.253 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	394	1,600	0.076	N-S(1):	0.271
	TH	2.00	792	3,200	0.247 *	N-S(2):	0.359 *
	LT	1.00	46	1,600	0.029	E-W(1):	0.392 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.000
	TH	1.00	44	1,600	0.051 *	V/C:	0.751
	LT	0.00	11	1,600	0.007	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	764	3,200	0.242	ICU:	0.851
	LT	2.00	287	2,560	0.112 *	LOS:	D
Eastbound	RT	1.00	521	1,600	0.270		
	TH	0.13	72	211	0.341		
	LT	0.87	474	1,389	0.341 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 17 - Lenardo Dr & I-405 SB Ramps
Description: Cumulative Base plus Project

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, WBR		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	152	1,600	0.000	N-S(1): 0.372 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	2.00	952	2,560	0.372 *	E-W(1): 0.094
Westbound	RT	1.00	298	1,600	0.000	E-W(2): 0.109 *
	TH	2.00	338	3,200	0.106 *	V/C: 0.481
	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: 0.581
	TH	3.00	448	4,800	0.094	
	LT	0.00	4	1,600	0.003 *	LOS: A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	242	1,600	0.000	N-S(1): 0.234 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	2.00	600	2,560	0.234 *	E-W(1): 0.181 *
Westbound	RT	1.00	415	1,600	0.000	E-W(2): 0.160
	TH	2.00	508	3,200	0.159	V/C: 0.415
	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: 0.515
	TH	3.00	868	4,800	0.181 *	
	LT	0.00	2	1,600	0.001	LOS: A

* - Denotes critical movement

Project Title: The Districts
Intersection: 18 - S Avalon Blvd & I-405 SB Ramps
Description: Cumulative Base plus Project

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, EBR,		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	487	1,600	0.000	N-S(1): 0.380 *
	TH	2.00	751	3,200	0.235	N-S(2): 0.328
	LT	0.00	0	0	0.000 *	E-W(1): 0.047
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.232 *
	TH	0.00	0	0	0.000 *	V/C: 0.612
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	125	0	0.000	ITS: 0.000
	TH	2.00	1,092	3,200	0.380 *	ICU: 0.712
	LT	1.00	149	1,600	0.093	LOS: C
Eastbound	RT	1.00	655	1,600	0.000	
	TH	2.00	150	3,200	0.047	
	LT	2.00	594	2,560	0.232 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	738	1,600	0.000	N-S(1): 0.451 *
	TH	2.00	1,006	3,200	0.314	N-S(2): 0.430
	LT	0.00	0	0	0.000 *	E-W(1): 0.138
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.164 *
	TH	0.00	0	0	0.000 *	V/C: 0.615
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	195	0	0.000	ITS: 0.000
	TH	2.00	1,249	3,200	0.451 *	ICU: 0.715
	LT	1.00	185	1,600	0.116	LOS: C
Eastbound	RT	1.00	607	1,600	0.000	
	TH	2.00	442	3,200	0.138	
	LT	2.00	419	2,560	0.164 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 19 - S Avalon Blvd & I-405 NB Ramps
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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: WBR

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	229	1,600	0.143	N-S(1):	0.393 *
	TH	3.00	915	4,800	0.191	N-S(2):	0.370
	LT	0.00	0	0	0.000 *	E-W(1):	0.103 *
Westbound	RT	1.00	588	1,600	0.000	E-W(2):	0.083
	TH	0.02	2	24	0.083	V/C:	0.496
	LT	1.98	263	2,541	0.103 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	1,256	3,200	0.393 *	ICU:	0.596
	LT	2.00	458	2,560	0.179	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	1.00	521	1,600	0.326 *	N-S(1):	0.317
	TH	3.00	1,331	4,800	0.277	N-S(2):	0.566 *
	LT	0.00	0	0	0.000	E-W(1):	0.151 *
Westbound	RT	1.00	469	1,600	0.000	E-W(2):	0.000
	TH	0.00	0	0	0.000	V/C:	0.717
	LT	2.00	385	2,560	0.151 *	Lost Time:	0.100
Northbound	RT	0.00	0	0	0.000	ITS:	0.000
	TH	2.00	1,016	3,200	0.317	ICU:	0.817
	LT	2.00	613	2,560	0.240 *	LOS:	D
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: The Districts
Intersection: 20 - S Main St & E 213th St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.408 *
	TH	2.00	570	3,200	0.178	N-S(2): 0.181
	LT	1.00	124	1,600	0.078 *	E-W(1): 0.383 *
Westbound	RT	0.51	312	814	0.344	E-W(2): 0.344
	TH	0.00	0	0	0.000	V/C: 0.791
	LT	0.49	301	786	0.383 *	Lost Time: 0.100
Northbound	RT	0.00	166	0	0.000	ITS: 0.000
	TH	2.00	885	1,600	0.330 *	ICU: 0.891
	LT	0.00	4	1,600	0.003	LOS: D
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	0	0	0.000	N-S(1): 0.576 *
	TH	2.00	913	3,200	0.285	N-S(2): 0.288
	LT	1.00	371	1,600	0.232 *	E-W(1): 0.254 *
Westbound	RT	0.42	171	674	0.138	E-W(2): 0.138
	TH	0.00	0	0	0.000	V/C: 0.830
	LT	0.58	235	926	0.254 *	Lost Time: 0.100
Northbound	RT	0.00	271	0	0.000	ITS: 0.000
	TH	2.00	824	1,600	0.344 *	ICU: 0.930
	LT	0.00	5	1,600	0.003	LOS: E
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: The Districts
Intersection: 21 - S Avalon Blvd & E 213th St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	178	0	0.000	N-S(1):	0.290
	TH	3.00	1,098	4,800	0.266 *	N-S(2):	0.334 *
	LT	1.00	86	1,600	0.053	E-W(1):	0.264 *
Westbound	RT	0.00	98	0	0.000	E-W(2):	0.259
	TH	2.00	243	3,200	0.106	V/C:	0.598
	LT	1.00	127	1,600	0.079 *	Lost Time:	0.100
Northbound	RT	0.00	139	0	0.000	ITS:	0.000
	TH	3.00	997	4,800	0.237	ICU:	0.698
	LT	1.00	108	1,600	0.068 *	LOS:	B
Eastbound	RT	0.30	88	476	0.151		
	TH	0.70	208	1,124	0.185 *		
	LT	1.00	244	1,600	0.153		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	189	0	0.000	N-S(1):	0.354
	TH	3.00	1,248	4,800	0.299 *	N-S(2):	0.392 *
	LT	1.00	124	1,600	0.078	E-W(1):	0.340 *
Westbound	RT	0.00	113	0	0.000	E-W(2):	0.266
	TH	2.00	212	3,200	0.102	V/C:	0.732
	LT	1.00	126	1,600	0.079 *	Lost Time:	0.100
Northbound	RT	0.00	130	0	0.000	ITS:	0.000
	TH	3.00	1,197	4,800	0.276	ICU:	0.832
	LT	1.00	148	1,600	0.093 *	LOS:	D
Eastbound	RT	0.27	113	434	0.214		
	TH	0.73	304	1,166	0.261 *		
	LT	1.00	263	1,600	0.164		

* - Denotes critical movement

Project Title: The Districts
Intersection: 22 - S Vermont Ave & W Carson St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	247	1,600	0.107	N-S(1): 0.342 *
	TH	2.00	437	3,200	0.137	N-S(2): 0.263
	LT	1.00	130	1,600	0.081 *	E-W(1): 0.455
Westbound	RT	1.00	137	1,600	0.045	E-W(2): 0.500 *
	TH	2.00	1,300	3,200	0.406 *	V/C: 0.842
	LT	1.00	329	1,600	0.206	Lost Time: 0.100
Northbound	RT	1.00	174	1,600	0.006	ITS: 0.000
	TH	2.00	836	3,200	0.261 *	ICU: 0.942
	LT	1.00	201	1,600	0.126	LOS: E
Eastbound	RT	1.00	91	1,600	0.000	
	TH	2.00	796	3,200	0.249	
	LT	1.00	151	1,600	0.094 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	284	1,600	0.127	N-S(1): 0.293
	TH	2.00	759	3,200	0.237 *	N-S(2): 0.313 *
	LT	1.00	236	1,600	0.148	E-W(1): 0.412 *
Westbound	RT	1.00	104	1,600	0.000	E-W(2): 0.384
	TH	2.00	904	3,200	0.282	V/C: 0.725
	LT	1.00	120	1,600	0.075 *	Lost Time: 0.100
Northbound	RT	1.00	213	1,600	0.095	ITS: 0.000
	TH	2.00	464	3,200	0.145	ICU: 0.825
	LT	1.00	122	1,600	0.076 *	LOS: D
Eastbound	RT	1.00	216	1,600	0.097	
	TH	2.00	1,077	3,200	0.337 *	
	LT	1.00	163	1,600	0.102	

* - Denotes critical movement

Project Title: The Districts
Intersection: 23 - Figueroa St & W Carson St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	326	0	0.000	N-S(1): 0.242
	TH	2.00	396	3,200	0.225 *	N-S(2): 0.364 *
	LT	2.00	45	2,560	0.018	E-W(1): 0.237
Westbound	RT	0.00	47	0	0.000	E-W(2): 0.260 *
	TH	2.00	486	3,200	0.167 *	V/C: 0.624
	LT	1.00	41	1,600	0.026	Lost Time: 0.100
Northbound	RT	0.00	156	0	0.000	ITS: 0.000
	TH	2.00	559	3,200	0.224	ICU: 0.724
	LT	2.00	357	2,560	0.139 *	LOS: C
Eastbound	RT	1.00	449	1,600	0.211	
	TH	2.00	449	3,200	0.140	
	LT	1.00	149	1,600	0.093 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	187	0	0.000	N-S(1): 0.199
	TH	2.00	459	3,200	0.202 *	N-S(2): 0.295 *
	LT	2.00	91	2,560	0.036	E-W(1): 0.324 *
Westbound	RT	0.00	34	0	0.000	E-W(2): 0.250
	TH	2.00	499	3,200	0.166	V/C: 0.619
	LT	1.00	75	1,600	0.047 *	Lost Time: 0.100
Northbound	RT	0.00	137	0	0.000	ITS: 0.000
	TH	2.00	384	3,200	0.163	ICU: 0.719
	LT	2.00	237	2,560	0.093 *	LOS: C
Eastbound	RT	1.00	518	1,600	0.277 *	
	TH	2.00	741	3,200	0.232	
	LT	1.00	135	1,600	0.084	

* - Denotes critical movement

Project Title: The Districts
Intersection: 24 - S Main St & W Carson St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.235 *
	TH	3.00	555	4,800	0.132	N-S(2): 0.217
	LT	1.00	57	1,600	0.036 *	E-W(1): 0.173
Westbound	RT	1.00	58	1,600	0.018	E-W(2): 0.236 *
	TH	2.00	370	3,200	0.116 *	V/C: 0.471
	LT	1.00	103	1,600	0.064	Lost Time: 0.100
Northbound	RT	0.00	118	0	0.000	ITS: 0.000
	TH	3.00	836	4,800	0.199 *	ICU: 0.571
	LT	1.00	136	1,600	0.085	LOS: A
Eastbound	RT	1.00	102	1,600	0.021	
	TH	2.00	350	3,200	0.109	
	LT	1.00	193	1,600	0.120 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	112	0	0.000	N-S(1): 0.269
	TH	3.00	800	4,800	0.190 *	N-S(2): 0.292 *
	LT	1.00	165	1,600	0.103	E-W(1): 0.283
Westbound	RT	1.00	53	1,600	0.000	E-W(2): 0.311 *
	TH	2.00	438	3,200	0.137 *	V/C: 0.603
	LT	1.00	187	1,600	0.117	Lost Time: 0.100
Northbound	RT	0.00	100	0	0.000	ITS: 0.000
	TH	3.00	697	4,800	0.166	ICU: 0.703
	LT	1.00	163	1,600	0.102 *	LOS: C
Eastbound	RT	1.00	43	1,600	0.000	
	TH	2.00	530	3,200	0.166	
	LT	1.00	278	1,600	0.174 *	

* - Denotes critical movement

Project Title: The Districts
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	124	0	0.000	N-S(1): 0.495 *
	TH	3.00	804	4,800	0.193	N-S(2): 0.235
	LT	1.00	274	1,600	0.171 *	E-W(1): 0.325 *
Westbound	RT	0.00	183	0	0.000	E-W(2): 0.220
	TH	2.00	350	3,200	0.167	V/C: 0.820
	LT	2.00	395	2,560	0.154 *	Lost Time: 0.100
Northbound	RT	0.00	518	1,600	0.324 *	ITS: 0.000
	TH	3.00	783	3,200	0.245	ICU: 0.920
	LT	1.00	67	1,600	0.042	LOS: E
Eastbound	RT	0.00	67	0	0.000	
	TH	2.00	480	3,200	0.171 *	
	LT	2.00	135	2,560	0.053	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	259	0	0.000	N-S(1): 0.523 *
	TH	3.00	855	4,800	0.232	N-S(2): 0.293
	LT	1.00	359	1,600	0.224 *	E-W(1): 0.377 *
Westbound	RT	0.00	215	0	0.000	E-W(2): 0.275
	TH	2.00	434	3,200	0.203	V/C: 0.900
	LT	2.00	392	2,560	0.153 *	Lost Time: 0.100
Northbound	RT	0.00	478	1,600	0.299 *	ITS: 0.000
	TH	3.00	823	3,200	0.257	ICU: 1.000
	LT	1.00	97	1,600	0.061	LOS: E
Eastbound	RT	0.00	73	0	0.000	
	TH	2.00	644	3,200	0.224 *	
	LT	2.00	185	2,560	0.072	

* - Denotes critical movement

Project Title: The Districts
Intersection: 26 - SR 405 SB Ramps & E Carson St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	10	0	0.000	N-S(1): 0.107 *
	TH	0.00	0	0	0.000	N-S(2): 0.064
	LT	0.00	0	0	0.000 *	E-W(1): 0.445 *
Westbound	RT	0.00	20	0	0.000	E-W(2): 0.251
	TH	3.00	1,167	4,800	0.247	V/C: 0.552
	LT	1.00	111	1,600	0.069 *	Lost Time: 0.100
Northbound	RT	1.00	227	1,600	0.107 *	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.652
	LT	1.00	103	1,600	0.064	LOS: B
Eastbound	RT	1.00	653	1,600	0.376 *	
	TH	2.00	708	3,200	0.221	
	LT	1.00	7	1,600	0.004	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	7	0	0.000	N-S(1): 0.003
	TH	0.00	0	0	0.000 *	N-S(2): 0.033 *
	LT	0.00	0	0	0.000	E-W(1): 0.571 *
Westbound	RT	0.00	22	0	0.000	E-W(2): 0.251
	TH	3.00	1,140	4,800	0.242	V/C: 0.604
	LT	1.00	109	1,600	0.068 *	Lost Time: 0.100
Northbound	RT	1.00	59	1,600	0.003	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.704
	LT	1.00	52	1,600	0.033 *	LOS: C
Eastbound	RT	1.00	831	1,600	0.503 *	
	TH	2.00	1,161	3,200	0.363	
	LT	1.00	15	1,600	0.009	

* - Denotes critical movement

Project Title: The Districts
Intersection: 27 - SR 405 NB Ramps & E Carson St
Description: Cumulative Base plus Project

Thru Lane: 1600 vph	N-S Split Phase : N
Left Lane: 1600 vph	E-W Split Phase : N
Double Lt Penalty: 20 %	Lost Time (% of cycle) : 10
ITS: 0 %	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	443	1,600	0.000	N-S(1): 0.030 *
	TH	0.41	15	649	0.023 *	N-S(2): 0.030 *
	LT	0.59	22	951	0.023 *	E-W(1): 0.267
Westbound	RT	1.00	256	1,600	0.148	E-W(2): 0.335 *
	TH	2.00	866	3,200	0.271 *	V/C: 0.365
	LT	1.00	14	1,600	0.009	Lost Time: 0.100
Northbound	RT	1.00	4	1,600	0.000	ITS: 0.000
	TH	0.36	4	582	0.007 *	ICU: 0.465
	LT	0.64	7	1,018	0.007 *	LOS: A
Eastbound	RT	0.00	40	0	0.000	
	TH	2.00	787	3,200	0.258	
	LT	1.00	102	1,600	0.064 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	440	1,600	0.000	N-S(1): 0.065 *
	TH	0.17	8	272	0.029 *	N-S(2): 0.065 *
	LT	0.83	39	1,328	0.029 *	E-W(1): 0.357 *
Westbound	RT	1.00	393	1,600	0.231	E-W(2): 0.335
	TH	2.00	799	3,200	0.250	V/C: 0.422
	LT	1.00	24	1,600	0.015 *	Lost Time: 0.100
Northbound	RT	1.00	21	1,600	0.006	ITS: 0.000
	TH	0.37	21	589	0.036 *	ICU: 0.522
	LT	0.63	36	1,011	0.036 *	LOS: A
Eastbound	RT	0.00	36	0	0.000	
	TH	2.00	1,057	3,200	0.342 *	
	LT	1.00	136	1,600	0.085	

* - Denotes critical movement

EXISTING - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave
Scenario: Existing
Count Date: 2016

East-West Street: Del Amo Blvd

Analyst: <Fehr & Peers> **Date:** 2017

		AM			PM		
		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB-- 0	0	NB-- 0	SB-- 0	0
ATSAC-1 or ATSAC+ATCS-2?		EB-- 0	WB-- 0	0	EB-- 0	WB-- 0	0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	↵ Left	28	1	28	4	1	4
	↵↔ Left-Through		0			0	
	→ Through	746	1	507	513	1	361
	↘ Through-Right		1			1	
	↘ Right	268	0	268	209	0	209
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
SOUTHBOUND	↵ Left	119	1	119	414	1	414
	↵↔ Left-Through		0			0	
	→ Through	263	2	132	952	2	476
	↘ Through-Right		0			0	
	↘ Right	16	1	0	84	1	70
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
EASTBOUND	↵ Left	62	1	62	28	1	28
	↵↔ Left-Through		0			0	
	→ Through	107	1	62	144	1	79
	↘ Through-Right		1			1	
	↘ Right	16	0	16	14	0	14
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
WESTBOUND	↵ Left	277	1	277	259	1	259
	↵↔ Left-Through		0			0	
	→ Through	210	1	210	170	1	170
	↘ Through-Right		0			0	
	↘ Right	396	1	337	197	1	0
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 626			<i>North-South:</i> 775
				<i>East-West:</i> 399			<i>East-West:</i> 338
				SUM: 1025			SUM: 1113
VOLUME/CAPACITY (V/C) RATIO:				0.683			0.742
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.683			0.742
LEVEL OF SERVICE (LOS):				B			C

EXISTING PLUS PROJECT - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The Districts
North-South Street: S Vermont Ave
Scenario: Existing plus Project
Count Date: 2016

East-West Street: Del Amo Blvd
Analyst: <Fehr & Peers> **Date:** 2017

		AM			PM		
		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		<i>NB--</i> 0	<i>SB--</i> 0	0	<i>NB--</i> 0	<i>SB--</i> 0	0
ATSAC-1 or ATSAC+ATCS-2?		<i>EB--</i> 0	<i>WB--</i> 0	0	<i>EB--</i> 0	<i>WB--</i> 0	0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	28	1	28	4	1	4
	Left-Through		0			0	
	Through	746	1	507	513	1	361
	Through-Right		1			1	
	Right	268	0	268	209	0	209
	Left-Through-Right		0			0	
SOUTHBOUND	Left	147.6	1	148	459.64	1	460
	Left-Through		0			0	
	Through	263	2	132	952	2	476
	Through-Right		0			0	
	Right	16	1	0	84	1	70
	Left-Through-Right		0			0	
EASTBOUND	Left	62	1	62	28	1	28
	Left-Through		0			0	
	Through	136.768	1	77	182.213	1	98
	Through-Right		1			1	
	Right	16	0	16	14	0	14
	Left-Through-Right		0			0	
WESTBOUND	Left	419.9	1	420	410.301	1	410
	Left-Through		0			0	
	Through	235.55	1	236	201.109	1	201
	Through-Right		0			0	
	Right	422.9	1	349	237.18	1	7
	Left-Through-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 655 <i>East-West:</i> 497 <i>SUM:</i> 1152			<i>North-South:</i> 821 <i>East-West:</i> 508 <i>SUM:</i> 1329
VOLUME/CAPACITY (V/C) RATIO:				0.768			0.886
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.768			0.886
LEVEL OF SERVICE (LOS):				C			D

FUTURE BASE - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave
Scenario: Future (2023) Base
Count Date: 2016

East-West Street: Del Amo Blvd
Analyst: <Fehr & Peers> **Date:** 2017

		AM			PM		
		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		<i>NB--</i> 0	<i>SB--</i> 0	0	<i>NB--</i> 0	<i>SB--</i> 0	0
ATSAC-1 or ATSAC+ATCS-2?		<i>EB--</i> 0	<i>WB--</i> 0	0	<i>EB--</i> 0	<i>WB--</i> 0	0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	29	1	29	4	1	4
	Left-Through		0			0	
	Through	786	1	532	544	1	381
	Through-Right		1			1	
	Right	277	0	277	217	0	217
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	124	1	124	429	1	429
	Left-Through		0			0	
	Through	275	2	138	1001	2	501
	Through-Right		0			0	
	Right	16	1	0	87	1	73
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	64	1	64	29	1	29
	Left-Through		0			0	
	Through	110	1	63	149	1	82
	Through-Right		1			1	
	Right	16	0	16	14	0	14
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	290	1	290	271	1	271
	Left-Through		0			0	
	Through	217	1	217	175	1	175
	Through-Right		0			0	
	Right	410	1	348	204	1	0
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 656 <i>East-West:</i> 412 <i>SUM:</i> 1068			<i>North-South:</i> 810 <i>East-West:</i> 353 <i>SUM:</i> 1163
VOLUME/CAPACITY (V/C) RATIO:				0.712			0.775
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.712			0.775
LEVEL OF SERVICE (LOS):				C			C

FUTURE PLUS PROJECT - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave
Scenario: Future plus Project
Count Date: 2016

East-West Street: Del Amo Blvd

Analyst: <Fehr & Peers> **Date:** 2017

		AM			PM		
		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		<i>NB--</i> 0	<i>SB--</i> 0	0	<i>NB--</i> 0	<i>SB--</i> 0	0
		<i>EB--</i> 0	<i>WB--</i> 0	0	<i>EB--</i> 0	<i>WB--</i> 0	0
ATSAC-1 or ATSAC+ATCS-2?				0			0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	29	1	29	4	1	4
	Left-Through		0			0	
	Through	786	1	532	544	1	381
	Through-Right		1			1	
	Right	277	0	277	217	0	217
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	152.6	1	153	474.64	1	475
	Left-Through		0			0	
	Through	275	2	138	1001	2	501
	Through-Right		0			0	
	Right	16	1	0	87	1	73
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	64	1	64	29	1	29
	Left-Through		0			0	
	Through	140	1	78	187	1	101
	Through-Right		1			1	
	Right	16	0	16	14	0	14
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	433	1	433	422	1	422
	Left-Through		0			0	
	Through	243	1	243	206	1	206
	Through-Right		0			0	
	Right	436.9	1	361	244.18	1	7
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 685 <i>East-West:</i> 511 <i>SUM:</i> 1196			<i>North-South:</i> 856 <i>East-West:</i> 523 <i>SUM:</i> 1379
VOLUME/CAPACITY (V/C) RATIO:				0.797			0.919
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.797			0.919
LEVEL OF SERVICE (LOS):				C			E

EXISTING - HCM

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	840	63	83	862
Future Volume (Veh/h)	0	0	840	63	83	862
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	913	68	90	937
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
			None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1596	490			913	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1596	490			913	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			88	
cM capacity (veh/h)	86	524			742	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	609	372	90	468	468	
Volume Left	0	0	90	0	0	
Volume Right	0	68	0	0	0	
cSH	1700	1700	742	1700	1700	
Volume to Capacity	0.36	0.22	0.12	0.28	0.28	
Queue Length 95th (ft)	0	0	10	0	0	
Control Delay (s)	0.0	0.0	10.5	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			49.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 33.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	197	292	900	0	0	693
Future Vol, veh/h	197	292	900	0	0	693
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	-	-	-	-
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	214	317	978	0	0	753

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1355	489	0
Stage 1	978	-	-
Stage 2	377	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 141	525	0
Stage 1	325	-	0
Stage 2	663	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 141	525	-
Mov Cap-2 Maneuver	~ 141	-	-
Stage 1	325	-	-
Stage 2	663	-	-

Approach	WB	NB	SB
HCM Control Delay, s	143.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 141	525	-
HCM Lane V/C Ratio	- 1.519	0.605	-
HCM Control Delay (s)	- \$ 323.5	21.8	-
HCM Lane LOS	- F	C	-
HCM 95th %tile Q(veh)	- 14.6	4	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	738	115	592	1175
Future Volume (Veh/h)	0	0	738	115	592	1175
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	802	125	643	1277
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2789	464			802	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2789	464			802	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			21	
cM capacity (veh/h)	3	545			817	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	535	392	643	638	638	
Volume Left	0	0	643	0	0	
Volume Right	0	125	0	0	0	
cSH	1700	1700	817	1700	1700	
Volume to Capacity	0.31	0.23	0.79	0.38	0.38	
Queue Length 95th (ft)	0	0	202	0	0	
Control Delay (s)	0.0	0.0	23.6	0.0	0.0	
Lane LOS			C			
Approach Delay (s)	0.0		7.9			
Approach LOS						
Intersection Summary						
Average Delay			5.3			
Intersection Capacity Utilization			63.5%		ICU Level of Service	B
Analysis Period (min)			15			

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	77	131	747	0	0	1675
Future Vol, veh/h	77	131	747	0	0	1675
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	-	-	-	-
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	84	142	812	0	0	1821

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1722	406	0
Stage 1	812	-	-
Stage 2	910	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 80	594	0
Stage 1	397	-	0
Stage 2	353	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 80	594	-
Mov Cap-2 Maneuver	~ 80	-	-
Stage 1	397	-	-
Stage 2	353	-	-

Approach	WB	NB	SB
HCM Control Delay, s	84.6	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 80	594	-
HCM Lane V/C Ratio	- 1.046	0.24	-
HCM Control Delay (s)	- 206.3	13	-
HCM Lane LOS	- F	B	-
HCM 95th %tile Q(veh)	- 5.8	0.9	-

Notes

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

EXISTING PLUS PROJECT - HCM

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	866	63	83	892
Future Volume (Veh/h)	0	0	866	63	83	892
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	941	68	90	970
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1640	504			941	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1640	504			941	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			88	
cM capacity (veh/h)	80	513			724	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	627	382	90	485	485	
Volume Left	0	0	90	0	0	
Volume Right	0	68	0	0	0	
cSH	1700	1700	724	1700	1700	
Volume to Capacity	0.37	0.22	0.12	0.29	0.29	
Queue Length 95th (ft)	0	0	11	0	0	
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			50.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 37.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	197	292	926	0	0	723
Future Vol, veh/h	197	292	926	0	0	723
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	-	-	-	-
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	214	317	1007	0	0	786

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1400	503	0
Stage 1	1007	-	-
Stage 2	393	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 131	514	0
Stage 1	314	-	0
Stage 2	651	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 131	514	-
Mov Cap-2 Maneuver	~ 131	-	-
Stage 1	314	-	-
Stage 2	651	-	-

Approach	WB	NB	SB
HCM Control Delay, s	165.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 131	514	-
HCM Lane V/C Ratio	- 1.635	0.617	-
HCM Control Delay (s)	-\$ 376.8	22.7	-
HCM Lane LOS	- F	C	-
HCM 95th %tile Q(veh)	- 15.6	4.1	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↘	↑↑
Traffic Volume (veh/h)	0	0	769	115	592	1213
Future Volume (Veh/h)	0	0	769	115	592	1213
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	836	125	643	1318
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
			None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2844	480			836	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2844	480			836	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			19	
cM capacity (veh/h)	3	532			794	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	557	404	643	659	659	
Volume Left	0	0	643	0	0	
Volume Right	0	125	0	0	0	
cSH	1700	1700	794	1700	1700	
Volume to Capacity	0.33	0.24	0.81	0.39	0.39	
Queue Length 95th (ft)	0	0	219	0	0	
Control Delay (s)	0.0	0.0	25.8	0.0	0.0	
Lane LOS	D					
Approach Delay (s)	0.0	8.5				
Approach LOS						
Intersection Summary						
Average Delay			5.7			
Intersection Capacity Utilization			64.4%	ICU Level of Service	C	
Analysis Period (min)			15			

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	77	131	778	0	0	1713
Future Vol, veh/h	77	131	778	0	0	1713
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	-	-	-	-
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	84	142	846	0	0	1862

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1777	423	0
Stage 1	846	-	-
Stage 2	931	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 74	579	0
Stage 1	381	-	0
Stage 2	344	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 74	579	-
Mov Cap-2 Maneuver	~ 74	-	-
Stage 1	381	-	-
Stage 2	344	-	-

Approach	WB	NB	SB
HCM Control Delay, s	98.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	74 579	-
HCM Lane V/C Ratio	-	1.131 0.246	-
HCM Control Delay (s)	-	243.2 13.2	-
HCM Lane LOS	-	F B	-
HCM 95th %tile Q(veh)	-	6.2 1	-

Notes

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

FUTURE BASE - HCM

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	868	65	86	888
Future Volume (Veh/h)	0	0	868	65	86	888
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	943	71	93	965
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1647	507			943	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1647	507			943	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			87	
cM capacity (veh/h)	78	511			723	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	629	385	93	482	482	
Volume Left	0	0	93	0	0	
Volume Right	0	71	0	0	0	
cSH	1700	1700	723	1700	1700	
Volume to Capacity	0.37	0.23	0.13	0.28	0.28	
Queue Length 95th (ft)	0	0	11	0	0	
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			51.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 40.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	203	301	929	0	0	714
Future Vol, veh/h	203	301	929	0	0	714
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	-	-	-	-
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	221	327	1010	0	0	776

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1398	505	0
Stage 1	1010	-	-
Stage 2	388	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 132	512	0
Stage 1	313	-	0
Stage 2	655	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 132	512	-
Mov Cap-2 Maneuver	~ 132	-	-
Stage 1	313	-	-
Stage 2	655	-	-

Approach	WB	NB	SB
HCM Control Delay, s	171.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 132	512	-
HCM Lane V/C Ratio	- 1.672	0.639	-
HCM Control Delay (s)	- \$ 391.6	23.6	-
HCM Lane LOS	- F	C	-
HCM 95th %tile Q(veh)	- 16.2	4.5	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	761	118	610	1213
Future Volume (Veh/h)	0	0	761	118	610	1213
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	827	128	663	1318
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2876	478			827	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2876	478			827	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			17	
cM capacity (veh/h)	2	534			800	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	551	404	663	659	659	
Volume Left	0	0	663	0	0	
Volume Right	0	128	0	0	0	
cSH	1700	1700	800	1700	1700	
Volume to Capacity	0.32	0.24	0.83	0.39	0.39	
Queue Length 95th (ft)	0	0	235	0	0	
Control Delay (s)	0.0	0.0	27.2	0.0	0.0	
Lane LOS			D			
Approach Delay (s)	0.0		9.1			
Approach LOS						
Intersection Summary						
Average Delay			6.2			
Intersection Capacity Utilization			65.3%		ICU Level of Service	C
Analysis Period (min)			15			

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	79	135	771	0	0	1728
Future Vol, veh/h	79	135	771	0	0	1728
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	-	-	-	-
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	86	147	838	0	0	1878

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1777	419	0
Stage 1	838	-	-
Stage 2	939	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 74	583	0
Stage 1	385	-	0
Stage 2	341	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 74	583	-
Mov Cap-2 Maneuver	~ 74	-	-
Stage 1	385	-	-
Stage 2	341	-	-

Approach	WB	NB	SB
HCM Control Delay, s	101.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 74	583	-
HCM Lane V/C Ratio	- 1.16	0.252	-
HCM Control Delay (s)	- 253.2	13.2	-
HCM Lane LOS	- F	B	-
HCM 95th %tile Q(veh)	- 6.5	1	-

Notes

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

FUTURE PLUS PROJECT - HCM

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	894	65	86	918
Future Volume (Veh/h)	0	0	894	65	86	918
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	972	71	93	998
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1692	522			972	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1692	522			972	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			87	
cM capacity (veh/h)	73	500			705	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	648	395	93	499	499	
Volume Left	0	0	93	0	0	
Volume Right	0	71	0	0	0	
cSH	1700	1700	705	1700	1700	
Volume to Capacity	0.38	0.23	0.13	0.29	0.29	
Queue Length 95th (ft)	0	0	11	0	0	
Control Delay (s)	0.0	0.0	10.9	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			51.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 44.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	203	301	955	0	0	744
Future Vol, veh/h	203	301	955	0	0	744
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	-	-	-	-
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	221	327	1038	0	0	809

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1442	519	0
Stage 1	1038	-	-
Stage 2	404	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 123	502	0
Stage 1	302	-	0
Stage 2	643	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 123	502	-
Mov Cap-2 Maneuver	~ 123	-	-
Stage 1	302	-	-
Stage 2	643	-	-

Approach	WB	NB	SB
HCM Control Delay, s	195.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 123 502	-
HCM Lane V/C Ratio	- 1.794 0.652	-
HCM Control Delay (s)	- \$ 448.6 24.6	-
HCM Lane LOS	- F C	-
HCM 95th %tile Q(veh)	- 17.1 4.6	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

07-19-2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	792	118	610	1251
Future Volume (Veh/h)	0	0	792	118	610	1251
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	861	128	663	1360
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2931	494			861	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2931	494			861	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			15	
cM capacity (veh/h)	2	521			776	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	574	415	663	680	680	
Volume Left	0	0	663	0	0	
Volume Right	0	128	0	0	0	
cSH	1700	1700	776	1700	1700	
Volume to Capacity	0.34	0.24	0.85	0.40	0.40	
Queue Length 95th (ft)	0	0	255	0	0	
Control Delay (s)	0.0	0.0	30.3	0.0	0.0	
Lane LOS			D			
Approach Delay (s)	0.0		9.9			
Approach LOS						
Intersection Summary						
Average Delay			6.7			
Intersection Capacity Utilization			66.1%		ICU Level of Service	C
Analysis Period (min)			15			

HCM 2010 TWSC
2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 9.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	79	135	802	0	0	1766
Future Vol, veh/h	79	135	802	0	0	1766
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	-	-	-	-
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	86	147	872	0	0	1920

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1832	436	0
Stage 1	872	-	-
Stage 2	960	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 68	568	0
Stage 1	369	-	0
Stage 2	332	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 68	568	-
Mov Cap-2 Maneuver	~ 68	-	-
Stage 1	369	-	-
Stage 2	332	-	-

Approach	WB	NB	SB
HCM Control Delay, s	119.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 68	568	-
HCM Lane V/C Ratio	- 1.263	0.258	-
HCM Control Delay (s)	-\$ 300.3	13.5	-
HCM Lane LOS	- F	B	-
HCM 95th %tile Q(veh)	- 6.9	1	-

Notes

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

EXISTING PLUS PROJECT WITH MITIGATION - ICU

Project Title: The Districts
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.305 *
	TH	2.00	764	3,200	0.239	N-S(2): 0.240
	LT	1.00	88	1,600	0.055 *	E-W(1): 0.042 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.016
	TH	0.00	0	0	0.000	V/C: 0.347
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	72	0	0.000	ITS: 0.000
	TH	2.00	726	1,600	0.250 *	ICU: 0.447
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.00	11	0	0.000	
	TH	2.00	96	1,600	0.042 *	
	LT	0.00	26	1,600	0.016	

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): 0.403 *
	TH	2.00	1,216	3,200	0.380	N-S(2): 0.380
	LT	1.00	226	1,600	0.141 *	E-W(1): 0.218 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.621
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	138	0	0.000	ITS: 0.000
	TH	2.00	700	3,200	0.262 *	ICU: 0.721
	LT	0.00	0	0	0.000	LOS: C
Eastbound	RT	0.00	45	0	0.000	
	TH	2.00	636	1,600	0.218 *	
	LT	0.00	17	1,600	0.011	

* - Denotes critical movement

Project Title: The Districts
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1): 0.325 *
	TH	2.00	263	3,200	0.082	N-S(2): 0.100
	LT	1.00	148	1,600	0.092 *	E-W(1): 0.212
Westbound	RT	1.00	423	1,600	0.218 *	E-W(2): 0.257 *
	TH	1.00	236	1,600	0.147	V/C: 0.582
	LT	2.00	420	2,560	0.164	Lost Time: 0.100
Northbound	RT	1.00	268	1,600	0.085	ITS: 0.000
	TH	2.00	746	3,200	0.233 *	ICU: 0.682
	LT	1.00	28	1,600	0.018	LOS: B
Eastbound	RT	0.00	16	0	0.000	
	TH	2.00	137	3,200	0.048	
	LT	1.00	62	1,600	0.039 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	84	1,600	0.044	N-S(1): 0.447 *
	TH	2.00	952	3,200	0.298	N-S(2): 0.301
	LT	1.00	460	1,600	0.287 *	E-W(1): 0.221 *
Westbound	RT	1.00	237	1,600	0.005	E-W(2): 0.144
	TH	1.00	201	1,600	0.126	V/C: 0.668
	LT	2.00	410	2,560	0.160 *	Lost Time: 0.100
Northbound	RT	1.00	209	1,600	0.050	ITS: 0.000
	TH	2.00	513	3,200	0.160 *	ICU: 0.768
	LT	1.00	4	1,600	0.003	LOS: C
Eastbound	RT	0.00	14	0	0.000	
	TH	2.00	182	3,200	0.061 *	
	LT	1.00	28	1,600	0.018	

* - Denotes critical movement

Project Title: The Districts
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	437	1,600	0.273 *	N-S(1):	0.253
	TH	2.00	378	1,600	0.236	N-S(2):	0.396 *
	LT	2.00	72	2,560	0.028	E-W(1):	0.353
Westbound	RT	0.00	186	0	0.000	E-W(2):	0.371 *
	TH	3.00	1,160	4,800	0.280 *	V/C:	0.767
	LT	2.00	471	2,560	0.184	Lost Time:	0.100
Northbound	RT	2.00	368	3,200	0.023	ITS:	0.000
	TH	2.00	721	3,200	0.225	ICU:	0.867
	LT	1.00	196	1,600	0.123 *	LOS:	D
Eastbound	RT	0.00	98	0	0.000		
	TH	3.00	714	4,800	0.169		
	LT	1.00	146	1,600	0.091 *		

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):	0.229
	TH	2.00	576	3,200	0.251 *	N-S(2):	0.284 *
	LT	2.00	233	2,560	0.091	E-W(1):	0.588 *
Westbound	RT	0.00	148	0	0.000	E-W(2):	0.267
	TH	3.00	961	4,800	0.231	V/C:	0.872
	LT	2.00	663	2,560	0.259 *	Lost Time:	0.100
Northbound	RT	2.00	438	3,200	0.007	ITS:	0.000
	TH	2.00	442	3,200	0.138	ICU:	0.972
	LT	1.00	53	1,600	0.033 *	LOS:	E
Eastbound	RT	0.00	164	0	0.000		
	TH	3.00	1,416	4,800	0.329 *		
	LT	1.00	58	1,600	0.036		

* - Denotes critical movement

Project Title: The Districts
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	126	0	0.000	N-S(1):	0.236 *
	TH	3.00	539	4,800	0.139	N-S(2):	0.223
	LT	1.00	81	1,600	0.050 *	E-W(1):	0.290
Westbound	RT	0.00	77	0	0.000	E-W(2):	0.441 *
	TH	3.00	1,610	4,800	0.352 *	V/C:	0.677
	LT	2.00	233	2,560	0.091	Lost Time:	0.100
Northbound	RT	1.00	240	1,600	0.105	ITS:	0.000
	TH	2.00	596	3,200	0.186 *	ICU:	0.777
	LT	1.00	135	1,600	0.084	LOS:	C
Eastbound	RT	1.00	38	1,600	0.000		
	TH	3.00	955	4,800	0.199		
	LT	1.00	142	1,600	0.089 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	151	0	0.000	N-S(1):	0.282 *
	TH	3.00	826	4,800	0.204	N-S(2):	0.275
	LT	1.00	199	1,600	0.124 *	E-W(1):	0.470 *
Westbound	RT	0.00	78	0	0.000	E-W(2):	0.433
	TH	3.00	1,507	4,800	0.330	V/C:	0.752
	LT	2.00	248	2,560	0.097 *	Lost Time:	0.100
Northbound	RT	1.00	295	1,600	0.136	ITS:	0.000
	TH	2.00	506	3,200	0.158 *	ICU:	0.852
	LT	1.00	113	1,600	0.071	LOS:	D
Eastbound	RT	1.00	116	1,600	0.037		
	TH	3.00	1,792	4,800	0.373 *		
	LT	1.00	164	1,600	0.103		

* - Denotes critical movement

Project Title: The Districts
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	261	1,600	0.068	N-S(1):	0.250 *
	TH	3.00	588	4,800	0.123	N-S(2):	0.237
	LT	2.00	166	2,560	0.065 *	E-W(1):	0.298
Westbound	RT	1.00	98	1,600	0.029	E-W(2):	0.466 *
	TH	2.00	882	3,200	0.276 *	V/C:	0.716
	LT	1.00	175	1,600	0.109	Lost Time:	0.100
Northbound	RT	1.00	135	1,600	0.030	ITS:	0.000
	TH	3.00	886	4,800	0.185 *	ICU:	0.816
	LT	2.00	293	2,560	0.114	LOS:	D
Eastbound	RT	1.00	135	1,600	0.027		
	TH	2.00	604	3,200	0.189		
	LT	1.00	304	1,600	0.190 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	333	1,600	0.125	N-S(1):	0.328 *
	TH	3.00	885	4,800	0.184	N-S(2):	0.288
	LT	2.00	337	2,560	0.132 *	E-W(1):	0.473 *
Westbound	RT	1.00	143	1,600	0.024	E-W(2):	0.402
	TH	2.00	753	3,200	0.235	V/C:	0.801
	LT	1.00	253	1,600	0.158 *	Lost Time:	0.100
Northbound	RT	1.00	204	1,600	0.048	ITS:	0.000
	TH	3.00	941	4,800	0.196 *	ICU:	0.901
	LT	2.00	266	2,560	0.104	LOS:	E
Eastbound	RT	1.00	267	1,600	0.115		
	TH	2.00	1,009	3,200	0.315 *		
	LT	1.00	267	1,600	0.167		

* - Denotes critical movement

Project Title: The Districts
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.91	449	3,063	0.147	N-S(1):	0.215
	TH	2.09	489	3,337	0.147 *	N-S(2):	0.402 *
	LT	0.00	0	0	0.000	E-W(1):	0.086
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.239 *
	TH	0.00	0	0	0.000 *	V/C:	0.641
	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	688	3,200	0.215	ICU:	0.741
	LT	2.00	653	2,560	0.255 *	LOS:	C
Eastbound	RT	1.00	342	1,600	0.086		
	TH	0.00	0	0	0.000		
	LT	2.00	613	2,560	0.239 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.85	656	2,952	0.222 *	N-S(1):	0.142
	TH	3.00	766	4,800	0.160	N-S(2):	0.467 *
	LT	0.00	0	0	0.000	E-W(1):	0.027
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.169 *
	TH	0.00	0	0	0.000 *	V/C:	0.636
	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	453	3,200	0.142	ICU:	0.736
	LT	2.00	627	2,560	0.245 *	LOS:	C
Eastbound	RT	1.00	239	1,600	0.027		
	TH	0.00	0	0	0.000		
	LT	2.00	433	2,560	0.169 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 20 - S Main St & E 213th St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.395 *
	TH	2.00	546	3,200	0.171	N-S(2): 0.174
	LT	1.00	119	1,600	0.074 *	E-W(1): 0.183 *
Westbound	RT	1.00	303	1,600	0.152	E-W(2): 0.152
	TH	0.00	0	0	0.000	V/C: 0.578
	LT	1.00	292	1,600	0.183 *	Lost Time: 0.100
Northbound	RT	0.00	161	0	0.000	ITS: 0.000
	TH	2.00	861	1,600	0.321 *	ICU: 0.678
	LT	0.00	4	1,600	0.003	LOS: B
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	0	0	0.000	N-S(1): 0.560 *
	TH	2.00	881	3,200	0.275	N-S(2): 0.278
	LT	1.00	360	1,600	0.225 *	E-W(1): 0.143 *
Westbound	RT	1.00	165	1,600	0.000	E-W(2): 0.000
	TH	0.00	0	0	0.000	V/C: 0.703
	LT	1.00	228	1,600	0.143 *	Lost Time: 0.100
Northbound	RT	0.00	263	0	0.000	ITS: 0.000
	TH	2.00	804	1,600	0.335 *	ICU: 0.803
	LT	0.00	5	1,600	0.003	LOS: D
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: The Districts
Intersection: 22 - S Vermont Ave & W Carson St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	241	1,600	0.106	N-S(1):	0.327 *
	TH	2.00	423	3,200	0.132	N-S(2):	0.254
	LT	1.00	120	1,600	0.075 *	E-W(1):	0.376 *
Westbound	RT	0.00	125	0	0.000	E-W(2):	0.372
	TH	3.00	1,232	4,800	0.283	V/C:	0.703
	LT	1.00	319	1,600	0.199 *	Lost Time:	0.100
Northbound	RT	1.00	169	1,600	0.006	ITS:	0.000
	TH	2.00	807	3,200	0.252 *	ICU:	0.803
	LT	1.00	195	1,600	0.122	LOS:	D
Eastbound	RT	0.00	88	0	0.000		
	TH	3.00	762	4,800	0.177 *		
	LT	1.00	143	1,600	0.089		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	272	1,600	0.122	N-S(1):	0.276
	TH	2.00	732	3,200	0.229 *	N-S(2):	0.303 *
	LT	1.00	219	1,600	0.137	E-W(1):	0.329 *
Westbound	RT	0.00	94	0	0.000	E-W(2):	0.294
	TH	3.00	857	4,800	0.198	V/C:	0.632
	LT	1.00	117	1,600	0.073 *	Lost Time:	0.100
Northbound	RT	1.00	207	1,600	0.093	ITS:	0.000
	TH	2.00	446	3,200	0.139	ICU:	0.732
	LT	1.00	118	1,600	0.074 *	LOS:	C
Eastbound	RT	0.00	210	0	0.000		
	TH	3.00	1,018	4,800	0.256 *		
	LT	1.00	154	1,600	0.096		

* - Denotes critical movement

Project Title: The Districts
Intersection: 23 - Figueroa St & W Carson St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	312	0	0.000	N-S(1):	0.233
	TH	2.00	384	3,200	0.217 *	N-S(2):	0.351 *
	LT	2.00	44	2,560	0.017	E-W(1):	0.230
Westbound	RT	0.00	46	0	0.000	E-W(2):	0.242 *
	TH	2.00	440	3,200	0.152 *	V/C:	0.593
	LT	1.00	40	1,600	0.025	Lost Time:	0.100
Northbound	RT	0.00	149	0	0.000	ITS:	0.000
	TH	2.00	541	3,200	0.216	ICU:	0.693
	LT	2.00	344	2,560	0.134 *	LOS:	B
Eastbound	RT	1.00	435	1,600	0.205		
	TH	2.00	424	3,200	0.133		
	LT	1.00	144	1,600	0.090 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	180	0	0.000	N-S(1):	0.189
	TH	2.00	445	3,200	0.195 *	N-S(2):	0.284 *
	LT	2.00	88	2,560	0.034	E-W(1):	0.312 *
Westbound	RT	0.00	33	0	0.000	E-W(2):	0.233
	TH	2.00	459	3,200	0.154	V/C:	0.596
	LT	1.00	71	1,600	0.044 *	Lost Time:	0.100
Northbound	RT	0.00	129	0	0.000	ITS:	0.000
	TH	2.00	369	3,200	0.155	ICU:	0.696
	LT	2.00	229	2,560	0.089 *	LOS:	B
Eastbound	RT	1.00	500	1,600	0.268 *		
	TH	2.00	690	3,200	0.216		
	LT	1.00	127	1,600	0.079		

* - Denotes critical movement

Project Title: The Districts
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	122	1,600	0.054	N-S(1): 0.372 * N-S(2): 0.276 E-W(1): 0.313 * E-W(2): 0.199
	TH	2.00	763	3,200	0.238	
	LT	1.00	211	1,600	0.132 *	
Westbound	RT	0.00	174	0	0.000	V/C: 0.685 Lost Time: 0.100 ITS: 0.000
	TH	2.00	318	3,200	0.154	
	LT	2.00	383	2,560	0.150 *	
Northbound	RT	1.00	503	1,600	0.240 *	ICU: 0.785
	TH	2.00	758	3,200	0.237	
	LT	1.00	60	1,600	0.038	
Eastbound	RT	0.00	65	0	0.000	LOS: C
	TH	2.00	457	3,200	0.163 *	
	LT	2.00	115	2,560	0.045	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	255	1,600	0.127	N-S(1): 0.440 * N-S(2): 0.301 E-W(1): 0.364 * E-W(2): 0.240
	TH	2.00	813	3,200	0.254	
	LT	1.00	306	1,600	0.191 *	
Westbound	RT	0.00	203	0	0.000	V/C: 0.804 Lost Time: 0.100 ITS: 0.000
	TH	2.00	356	3,200	0.175	
	LT	2.00	380	2,560	0.148 *	
Northbound	RT	1.00	464	1,600	0.216	ICU: 0.904
	TH	2.00	796	3,200	0.249 *	
	LT	1.00	75	1,600	0.047	
Eastbound	RT	0.00	71	0	0.000	LOS: E
	TH	2.00	621	3,200	0.216 *	
	LT	2.00	166	2,560	0.065	

* - Denotes critical movement

FUTURE PLUS PROJECT WITH MITIGATION - ICU

Project Title: The Districts
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Cumulative Base plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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):	0.317 *
	TH	2.00	787	3,200	0.246	N-S(2):	0.247
	LT	1.00	91	1,600	0.057 *	E-W(1):	0.043 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.017
	TH	0.00	0	0	0.000	V/C:	0.360
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	78	0	0.000	ITS:	0.000
	TH	2.00	753	1,600	0.260 *	ICU:	0.460
	LT	0.00	2	1,600	0.001	LOS:	A
Eastbound	RT	0.00	11	0	0.000		
	TH	2.00	99	1,600	0.043 *		
	LT	0.00	27	1,600	0.017		

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):	0.417 *
	TH	2.00	1,259	3,200	0.393	N-S(2):	0.393
	LT	1.00	234	1,600	0.146 *	E-W(1):	0.225 *
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.011
	TH	0.00	0	0	0.000	V/C:	0.642
	LT	0.00	0	0	0.000 *	Lost Time:	0.100
Northbound	RT	0.00	144	0	0.000	ITS:	0.000
	TH	2.00	721	3,200	0.271 *	ICU:	0.742
	LT	0.00	0	0	0.000	LOS:	C
Eastbound	RT	0.00	46	0	0.000		
	TH	2.00	655	1,600	0.225 *		
	LT	0.00	18	1,600	0.011		

* - Denotes critical movement

Project Title: The Districts
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Cumulative Base plus Project with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	16	1,600	0.000	N-S(1): 0.341 *
	TH	2.00	275	3,200	0.086	N-S(2): 0.104
	LT	1.00	153	1,600	0.095 *	E-W(1): 0.218
Westbound	RT	1.00	437	1,600	0.225 *	E-W(2): 0.265 *
	TH	1.00	243	1,600	0.152	
	LT	2.00	433	2,560	0.169	V/C: 0.606
Northbound	RT	1.00	277	1,600	0.089	Lost Time: 0.100
	TH	2.00	786	3,200	0.246 *	ITS: 0.000
	LT	1.00	29	1,600	0.018	
Eastbound	RT	0.00	16	0	0.000	ICU: 0.706
	TH	2.00	140	3,200	0.049	
	LT	1.00	64	1,600	0.040 *	LOS: C

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	87	1,600	0.045	N-S(1): 0.467 *
	TH	2.00	1,001	3,200	0.313	N-S(2): 0.316
	LT	1.00	475	1,600	0.297 *	E-W(1): 0.228 *
Westbound	RT	1.00	244	1,600	0.004	E-W(2): 0.147
	TH	1.00	206	1,600	0.129	
	LT	2.00	422	2,560	0.165 *	V/C: 0.695
Northbound	RT	1.00	217	1,600	0.053	Lost Time: 0.100
	TH	2.00	544	3,200	0.170 *	ITS: 0.000
	LT	1.00	4	1,600	0.003	
Eastbound	RT	0.00	14	0	0.000	ICU: 0.795
	TH	2.00	187	3,200	0.063 *	
	LT	1.00	29	1,600	0.018	LOS: C

* - Denotes critical movement

Project Title: The Districts
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Cumulative Base plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	450	1,600	0.281 *	N-S(1):	0.261
	TH	2.00	389	1,600	0.243	N-S(2):	0.407 *
	LT	2.00	73	2,560	0.028	E-W(1):	0.377
Westbound	RT	0.00	192	0	0.000	E-W(2):	0.385 *
	TH	3.00	1,203	4,800	0.291 *	V/C:	0.792
	LT	2.00	519	2,560	0.203	Lost Time:	0.100
Northbound	RT	2.00	384	3,200	0.019	ITS:	0.000
	TH	2.00	744	3,200	0.233	ICU:	0.892
	LT	1.00	202	1,600	0.126 *	LOS:	D
Eastbound	RT	0.00	101	0	0.000		
	TH	3.00	737	4,800	0.174		
	LT	1.00	150	1,600	0.094 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	233	0	0.000	N-S(1):	0.236
	TH	2.00	594	3,200	0.258 *	N-S(2):	0.292 *
	LT	2.00	240	2,560	0.094	E-W(1):	0.611 *
Westbound	RT	0.00	152	0	0.000	E-W(2):	0.276
	TH	3.00	993	4,800	0.238	V/C:	0.903
	LT	2.00	687	2,560	0.269 *	Lost Time:	0.100
Northbound	RT	2.00	467	3,200	0.012	ITS:	0.000
	TH	2.00	455	3,200	0.142	ICU:	1.003
	LT	1.00	55	1,600	0.034 *	LOS:	F
Eastbound	RT	0.00	169	0	0.000		
	TH	3.00	1,475	4,800	0.342 *		
	LT	1.00	60	1,600	0.038		

* - Denotes critical movement

Project Title: The Districts
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Cumulative Base plus Project with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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	130	0	0.000	N-S(1): 0.246 *
	TH	3.00	554	4,800	0.143	N-S(2): 0.228
	LT	1.00	85	1,600	0.053 *	E-W(1): 0.303
Westbound	RT	0.00	79	0	0.000	E-W(2): 0.462 *
	TH	3.00	1,703	4,800	0.371 *	V/C: 0.708
	LT	2.00	249	2,560	0.097	Lost Time: 0.100
Northbound	RT	1.00	248	1,600	0.106	ITS: 0.000
	TH	2.00	617	3,200	0.193 *	
	LT	1.00	137	1,600	0.085	
Eastbound	RT	1.00	39	1,600	0.000	ICU: 0.808
	TH	3.00	989	4,800	0.206	
	LT	1.00	146	1,600	0.091 *	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	156	0	0.000	N-S(1): 0.295 *
	TH	3.00	852	4,800	0.210	N-S(2): 0.281
	LT	1.00	210	1,600	0.131 *	E-W(1): 0.492 *
Westbound	RT	0.00	80	0	0.000	E-W(2): 0.448
	TH	3.00	1,562	4,800	0.342	V/C: 0.787
	LT	2.00	260	2,560	0.101 *	Lost Time: 0.100
Northbound	RT	1.00	304	1,600	0.139	ITS: 0.000
	TH	2.00	526	3,200	0.164 *	
	LT	1.00	114	1,600	0.071	
Eastbound	RT	1.00	120	1,600	0.039	ICU: 0.887
	TH	3.00	1,876	4,800	0.391 *	
	LT	1.00	169	1,600	0.106	LOS: D

* - Denotes critical movement

Project Title: The Districts
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Cumulative Base plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	268	1,600	0.070	N-S(1):	0.262 *
	TH	3.00	619	4,800	0.129	N-S(2):	0.249
	LT	2.00	171	2,560	0.067 *	E-W(1):	0.309
Westbound	RT	1.00	101	1,600	0.030	E-W(2):	0.480 *
	TH	2.00	908	3,200	0.284 *	V/C:	0.742
	LT	1.00	180	1,600	0.113	Lost Time:	0.100
Northbound	RT	1.00	139	1,600	0.031	ITS:	0.000
	TH	3.00	938	4,800	0.195 *	ICU:	0.842
	LT	2.00	307	2,560	0.120	LOS:	D
Eastbound	RT	1.00	157	1,600	0.038		
	TH	2.00	626	3,200	0.196		
	LT	1.00	314	1,600	0.196 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	343	1,600	0.129	N-S(1):	0.343 *
	TH	3.00	942	4,800	0.196	N-S(2):	0.309
	LT	2.00	347	2,560	0.136 *	E-W(1):	0.490 *
Westbound	RT	1.00	147	1,600	0.024	E-W(2):	0.415
	TH	2.00	782	3,200	0.244	V/C:	0.833
	LT	1.00	261	1,600	0.163 *	Lost Time:	0.100
Northbound	RT	1.00	210	1,600	0.050	ITS:	0.000
	TH	3.00	993	4,800	0.207 *	ICU:	0.933
	LT	2.00	289	2,560	0.113	LOS:	E
Eastbound	RT	1.00	282	1,600	0.120		
	TH	2.00	1,045	3,200	0.327 *		
	LT	1.00	274	1,600	0.171		

* - Denotes critical movement

Project Title: The Districts
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Cumulative Base plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.96	490	3,136	0.156	N-S(1):	0.223
	TH	2.04	510	3,264	0.156 *	N-S(2):	0.420 *
	LT	0.00	0	0	0.000	E-W(1):	0.087
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.247 *
	TH	0.00	0	0	0.000 *	V/C:	0.667
	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	713	3,200	0.223	ICU:	0.767
	LT	2.00	677	2,560	0.264 *	LOS:	C
Eastbound	RT	1.00	351	1,600	0.087		
	TH	0.00	0	0	0.000		
	LT	2.00	633	2,560	0.247 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.84	678	2,952	0.230 *	N-S(1):	0.149
	TH	3.00	792	4,800	0.165	N-S(2):	0.483 *
	LT	0.00	0	0	0.000	E-W(1):	0.027
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.177 *
	TH	0.00	0	0	0.000 *	V/C:	0.660
	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	476	3,200	0.149	ICU:	0.760
	LT	2.00	648	2,560	0.253 *	LOS:	C
Eastbound	RT	1.00	245	1,600	0.027		
	TH	0.00	0	0	0.000		
	LT	2.00	453	2,560	0.177 *		

* - Denotes critical movement

Project Title: The Districts
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Cumulative Base plus Project with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	439	1,600	0.104	N-S(1): 0.246 *
	TH	2.00	356	3,200	0.111	N-S(2): 0.226
	LT	1.00	89	1,600	0.055 *	E-W(1): 0.505 *
Westbound	RT	1.00	160	1,600	0.072	E-W(2): 0.000
	TH	2.00	526	3,200	0.164 *	V/C: 0.751
	LT	1.00	66	1,600	0.041	Lost Time: 0.100
Northbound	RT	1.00	84	1,600	0.032	ITS: 0.000
	TH	2.00	610	3,200	0.191 *	
	LT	1.00	184	1,600	0.115	
Eastbound	RT	0.00	164	0	0.000	ICU: 0.851
	TH	1.58	528	2,535	0.273	
	LT	1.42	618	1,812	0.341 *	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	381	1,600	0.030	N-S(1): 0.214 *
	TH	2.00	479	3,200	0.150	N-S(2): 0.205
	LT	1.00	168	1,600	0.105 *	E-W(1): 0.562 *
Westbound	RT	1.00	168	1,600	0.052	E-W(2): 0.000
	TH	2.00	471	3,200	0.147 *	V/C: 0.776
	LT	1.00	51	1,600	0.032	Lost Time: 0.100
Northbound	RT	1.00	79	1,600	0.033	ITS: 0.000
	TH	2.00	349	3,200	0.109 *	
	LT	1.00	88	1,600	0.055	
Eastbound	RT	0.00	163	0	0.000	ICU: 0.876
	TH	1.84	814	2,940	0.332	
	LT	1.16	618	1,488	0.415 *	LOS: D

* - Denotes critical movement

Project Title: The Districts
Intersection: 20 - S Main St & E 213th St
Description: Cumulative Base plus Project with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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): 0.408 *
	TH	2.00	570	3,200	0.178	N-S(2): 0.181
	LT	1.00	124	1,600	0.078 *	E-W(1): 0.188 *
Westbound	RT	1.00	312	1,600	0.156	E-W(2): 0.156
	TH	0.00	0	0	0.000	
	LT	1.00	301	1,600	0.188 *	V/C: 0.596
Northbound	RT	0.00	166	0	0.000	Lost Time: 0.100
	TH	2.00	885	1,600	0.330 *	ITS: 0.000
	LT	0.00	4	1,600	0.003	
Eastbound	RT	0.00	0	0	0.000	ICU: 0.696
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	LOS: B

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	0	0	0.000	N-S(1): 0.576 *
	TH	2.00	913	3,200	0.285	N-S(2): 0.288
	LT	1.00	371	1,600	0.232 *	E-W(1): 0.147 *
Westbound	RT	1.00	171	1,600	0.000	E-W(2): 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	235	1,600	0.147 *	V/C: 0.723
Northbound	RT	0.00	271	0	0.000	Lost Time: 0.100
	TH	2.00	824	1,600	0.344 *	ITS: 0.000
	LT	0.00	5	1,600	0.003	
Eastbound	RT	0.00	0	0	0.000	ICU: 0.823
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	LOS: D

* - Denotes critical movement

Project Title: The Districts
Intersection: 22 - S Vermont Ave & W Carson St
Description: Cumulative Base plus Project with Mitigations

Thru Lane: 1600 vph	N-S Split Phase : N
Left Lane: 1600 vph	E-W Split Phase : N
Double Lt Penalty: 20 %	Lost Time (% of cycle) : 10
ITS: 0 %	V/C Round Off (decs.) : 3
OLA Movements :	
FF Movements:	

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	247	1,600	0.107	N-S(1): 0.342 *
	TH	2.00	437	3,200	0.137	N-S(2): 0.263
	LT	1.00	130	1,600	0.081 *	E-W(1): 0.391
Westbound	RT	0.00	137	0	0.000	E-W(2): 0.393 *
	TH	3.00	1,300	4,800	0.299 *	V/C: 0.735
	LT	1.00	329	1,600	0.206	Lost Time: 0.100
Northbound	RT	1.00	174	1,600	0.006	ITS: 0.000
	TH	2.00	836	3,200	0.261 *	
	LT	1.00	201	1,600	0.126	
Eastbound	RT	0.00	91	0	0.000	ICU: 0.835
	TH	3.00	796	4,800	0.185	
	LT	1.00	151	1,600	0.094 *	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	284	1,600	0.127	N-S(1): 0.293
	TH	2.00	759	3,200	0.237 *	N-S(2): 0.313 *
	LT	1.00	236	1,600	0.148	E-W(1): 0.344 *
Westbound	RT	0.00	104	0	0.000	E-W(2): 0.312
	TH	3.00	904	4,800	0.210	V/C: 0.657
	LT	1.00	120	1,600	0.075 *	Lost Time: 0.100
Northbound	RT	1.00	213	1,600	0.095	ITS: 0.000
	TH	2.00	464	3,200	0.145	
	LT	1.00	122	1,600	0.076 *	
Eastbound	RT	0.00	216	0	0.000	ICU: 0.757
	TH	3.00	1,077	4,800	0.269 *	
	LT	1.00	163	1,600	0.102	LOS: C

* - Denotes critical movement

Project Title: The Districts
Intersection: 23 - Figueroa St & W Carson St
Description: Cumulative Base plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	326	0	0.000	N-S(1): 0.242
	TH	2.00	396	3,200	0.225 *	N-S(2): 0.364 *
	LT	2.00	45	2,560	0.018	E-W(1): 0.237
Westbound	RT	0.00	47	0	0.000	E-W(2): 0.260 *
	TH	2.00	486	3,200	0.167 *	V/C: 0.624
	LT	1.00	41	1,600	0.026	Lost Time: 0.100
Northbound	RT	0.00	156	0	0.000	ITS: 0.000
	TH	2.00	559	3,200	0.224	ICU: 0.724
	LT	2.00	357	2,560	0.139 *	LOS: C
Eastbound	RT	1.00	449	1,600	0.211	
	TH	2.00	449	3,200	0.140	
	LT	1.00	149	1,600	0.093 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	187	0	0.000	N-S(1): 0.199
	TH	2.00	459	3,200	0.202 *	N-S(2): 0.295 *
	LT	2.00	91	2,560	0.036	E-W(1): 0.324 *
Westbound	RT	0.00	34	0	0.000	E-W(2): 0.250
	TH	2.00	499	3,200	0.166	V/C: 0.619
	LT	1.00	75	1,600	0.047 *	Lost Time: 0.100
Northbound	RT	0.00	137	0	0.000	ITS: 0.000
	TH	2.00	384	3,200	0.163	ICU: 0.719
	LT	2.00	237	2,560	0.093 *	LOS: C
Eastbound	RT	1.00	518	1,600	0.277 *	
	TH	2.00	741	3,200	0.232	
	LT	1.00	135	1,600	0.084	

* - Denotes critical movement

Project Title: The Districts
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Cumulative Base plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	0.051	N-S(1):	0.418 *
	TH	2.00	804	3,200	0.251	N-S(2):	0.293
	LT	1.00	274	1,600	0.171 *	E-W(1):	0.325 *
Westbound	RT	0.00	183	0	0.000	E-W(2):	0.220
	TH	2.00	350	3,200	0.167	V/C:	0.743
	LT	2.00	395	2,560	0.154 *	Lost Time:	0.100
Northbound	RT	1.00	518	1,600	0.247 *	ITS:	0.000
	TH	2.00	783	3,200	0.245	ICU:	0.843
	LT	1.00	67	1,600	0.042	LOS:	D
Eastbound	RT	0.00	67	0	0.000		
	TH	2.00	480	3,200	0.171 *		
	LT	2.00	135	2,560	0.053		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	259	1,600	0.126	N-S(1):	0.481 *
	TH	2.00	855	3,200	0.267	N-S(2):	0.328
	LT	1.00	359	1,600	0.224 *	E-W(1):	0.377 *
Westbound	RT	0.00	215	0	0.000	E-W(2):	0.275
	TH	2.00	434	3,200	0.203	V/C:	0.858
	LT	2.00	392	2,560	0.153 *	Lost Time:	0.100
Northbound	RT	1.00	478	1,600	0.222	ITS:	0.000
	TH	2.00	823	3,200	0.257 *	ICU:	0.958
	LT	1.00	97	1,600	0.061	LOS:	E
Eastbound	RT	0.00	73	0	0.000		
	TH	2.00	644	3,200	0.224 *		
	LT	2.00	185	2,560	0.072		

* - Denotes critical movement

EXISTING PLUS PROJECT WITH MITIGATION - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave **East-West Street:** Del Amo Blvd
Scenario: Existing plus Project plus Mitigation
Count Date: 2016 **Analyst:** <Fehr & Peers> **Date:** 2017

		AM			PM		
				3			3
No. of Phases				0			0
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		<i>NB--</i> 0	<i>SB--</i> 0	0	<i>NB--</i> 0	<i>SB--</i> 0	0
ATSAC-1 or ATSAC+ATCS-2?		<i>EB--</i> 0	<i>WB--</i> 0	0	<i>EB--</i> 0	<i>WB--</i> 0	0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	28	1	28	4	1	4
	Left-Through		0			0	
	Through	746	2	373	513	2	257
	Through-Right		0			0	
	Right	268	1	153	209	1	96
	Left-Through-Right		0			0	
	Left-Right		0			0	
SOUTHBOUND	Left	147.6	1	148	459.64	1	460
	Left-Through		0			0	
	Through	263	2	132	952	2	476
	Through-Right		0			0	
	Right	16	1	0	84	1	70
	Left-Through-Right		0			0	
	Left-Right		0			0	
EASTBOUND	Left	62	1	62	28	1	28
	Left-Through		0			0	
	Through	136.7684	1	77	182.2126	1	98
	Through-Right		1			1	
	Right	16	0	16	14	0	14
	Left-Through-Right		0			0	
	Left-Right		0			0	
WESTBOUND	Left	420	2	231	410	2	226
	Left-Through		0			0	
	Through	236	1	236	201	1	201
	Through-Right		0			0	
	Right	422.9	1	349	237.18	1	7
	Left-Through-Right		0			0	
	Left-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 521			<i>North-South:</i> 717
				<i>East-West:</i> 411			<i>East-West:</i> 324
				SUM: 932			SUM: 1041
VOLUME/CAPACITY (V/C) RATIO:				0.654			0.731
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.654			0.731
LEVEL OF SERVICE (LOS):				B			C

FUTURE PLUS PROJECT WITH MITIGATION- CMA



Level of Service Worksheet (Circular 212 Method)



I/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave **East-West Street:** Del Amo Blvd
Scenario: Future plus Project plus Mitigation
Count Date: 2016 **Analyst:** <Fehr & Peers> **Date:** 2017

		AM			PM		
				3			3
No. of Phases				0			0
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		<i>NB--</i> 0	<i>SB--</i> 0	0	<i>NB--</i> 0	<i>SB--</i> 0	0
ATSAC-1 or ATSAC+ATCS-2?		<i>EB--</i> 0	<i>WB--</i> 0	0	<i>EB--</i> 0	<i>WB--</i> 0	0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	29	1	29	4	1	4
	Left-Through		0			0	
	Through	786	2	393	544	2	272
	Through-Right		0			0	
	Right	277	1	158	217	1	101
	Left-Through-Right		0			0	
SOUTHBOUND	Left	152.6	1	153	474.64	1	475
	Left-Through		0			0	
	Through	275	2	138	1001	2	501
	Through-Right		0			0	
	Right	16	1	0	87	1	73
	Left-Through-Right		0			0	
EASTBOUND	Left	64	1	64	29	1	29
	Left-Through		0			0	
	Through	140	1	78	187	1	101
	Through-Right		1			1	
	Right	16	0	16	14	0	14
	Left-Through-Right		0			0	
WESTBOUND	Left	433	2	238	422	2	232
	Left-Through		0			0	
	Through	243	1	243	206	1	206
	Through-Right		0			0	
	Right	437	1	361	244	1	7
	Left-Through-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 546 <i>East-West:</i> 425 <i>SUM:</i> 971			<i>North-South:</i> 747 <i>East-West:</i> 333 <i>SUM:</i> 1080
VOLUME/CAPACITY (V/C) RATIO:				0.681			0.758
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.681			0.758
LEVEL OF SERVICE (LOS):				B			C

**APPENDIX E:
ORIGINAL PROJECT COMPARATIVE ANALYSIS
(2017 ANALYSIS METHODOLOGY)**

**APPENDIX E1
THE ORIGINAL PROJECT COMPARATIVE ANALYSIS (2017 ANALYSIS METHODOLOGY)
TRIP GENERATION**

Land Use	ITE Land Use Code	Size	Trip Generation Rates [a]									Estimated Trip Generation					
			Daily Rate	AM Peak Hour			PM Peak Hour			Trip Rate Unit	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
				Rate	% In	% Out	Rate	% In	% Out			In	Out	Total	In	Out	Total
Shopping Center Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	820	1410.000 ksf	[e] 1% 10% 10% 10%	[e] 62% 5% 10% 10%	38% 1% 5% 10%	[e] 48% 10% 10% 10%	52% 1% 10% 10% 10%	per ksf	37,925 (379) (3,755) 33,791 (3,379) 30,412	485 (5) (24) 456 (46) 410	298 (3) (15) 280 (28) 252	783 (8) (39) 736 (74) 662	1,693 (17) (168) 1,508 (151) 1,357	1,835 (18) (182) 1,635 (164) 1,471	3,528 (35) (350) 3,143 (315) 2,828		
Super Market Transit, Walk, Bike credit [c] Internal capture [b] Total Driveway Trips Pass-by credit [d] Net Driveway Trips	850	90.0 ksf	102.24 1% 10% 10% 10%	3.40 62% 5% 10% 10%	38% 1% 1% 10% 10%	9.48 51% 10% 10% 10%	49% 1% 10% 10% 10%	per ksf	9,202 (92) (911) 8,199 (820) 7,379	190 (2) (9) 179 (18) 161	116 (1) (6) 109 (11) 98	306 (3) (15) 288 (29) 259	435 (4) (43) 388 (39) 349	418 (4) (41) 373 (37) 336	853 (8) (84) 761 (76) 685		
Restaurant (High Turnover Sitdown) Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	932	50.000 ksf	127.15 1% 20% 10% 10%	10.81 55% 10% 10% 10%	45% 1% 10% 10% 10%	9.85 60% 30% 10% 10%	40% 1% 30% 10% 10%	per ksf	6,358 (64) (1,259) 5,035 (504) 4,531	298 (3) (30) 265 (27) 238	243 (2) (24) 217 (22) 195	541 (5) (54) 482 (49) 433	296 (3) (88) 205 (21) 184	197 (2) (59) 136 (14) 122	493 (5) (147) 341 (35) 306		
Restaurant (Fast-Food) Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	933	15.000 ksf	716.00 1% 20% 30% 30%	43.87 60% 10% 30% 30%	40% 1% 10% 30% 30%	26.15 51% 30% 30% 30%	49% 1% 30% 30% 30%	per ksf	10,740 (107) (2,127) 8,506 (2,552) 5,954	395 (4) (39) 352 (106) 246	263 (3) (26) 234 (70) 164	658 (7) (65) 586 (176) 410	200 (2) (59) 139 (42) 97	192 (2) (57) 133 (40) 93	392 (4) (116) 272 (89) 190		
Restaurant (Quality) Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	931	16.125 ksf	89.95 1% 20% 10% 10%	0.81 82% 10% 10% 10%	18% 1% 10% 10% 10%	7.49 67% 30% 10% 10%	33% 1% 30% 10% 10%	per ksf	1,450 (15) (287) 1,148 (115) 1,033	11 (0) (1) 10 (1) 9	2 (0) (0) 2 (1) 2	13 (1) (11) 12 (11) 11	81 (1) (24) 56 (6) 50	40 (0) (12) 28 (3) 25	121 (1) (36) 84 (9) 75		
Multiplex Movie Theater Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	443/445 [f]	4,500 Seats 110,000 KSF	1.76 1% 10% 10% 10%	0.010 60% 10% 10% 10%	40% 1% 10% 10% 10%	0.10 60% 10% 10% 10%	40% 1% 10% 10% 10%	per seat	7,920 (79) (784) 7,057 (706) 6,351	27 (0) (3) 24 (0) 24	18 (0) (2) 16 (0) 16	45 (0) (5) 40 (0) 40	270 (3) (27) 240 (24) 216	180 (2) (18) 160 (16) 144	450 (5) (45) 400 (40) 360		
Multipurpose Recreational Facility Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	435 [g]	79,000 KSF	59.67 1% 20% 10% 10%	1.181 80% 0% 0% 0%	20% 1% 0% 0% 0%	3.58 55% 20% 10% 10%	45% 1% 20% 10% 10%	per ksf	4,714 (47) (933) 3,734 (373) 3,361	74 (1) (0) 73 (0) 73	19 (0) (0) 19 (0) 19	93 (1) (31) 92 (12) 92	156 (2) (31) 123 (12) 111	127 (1) (25) 101 (10) 91	283 (3) (56) 224 (22) 202		
Bowling Alley Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	437	25,000 KSF	33.33 1% 20% 10% 10%	3.130 60% 0% 0% 0%	40% 1% 0% 0% 0%	3.54 55% 20% 10% 10%	45% 1% 20% 10% 10%	per ksf	833 (8) (165) 660 (66) 594	47 (0) (0) 47 (0) 47	31 (0) (0) 31 (0) 31	78 (0) (0) 78 (0) 78	49 (0) (10) 39 (4) 35	40 (0) (8) 32 (3) 29	89 (0) (18) 71 (7) 64		
Hotel Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	310	300 rooms	8.17 1% 20% 0% 0%	0.53 59% 10% 0% 0%	41% 1% 10% 0% 0%	0.60 51% 30% 0% 0%	49% 1% 30% 0% 0%	per room	2,451 (25) (485) 1,941 (0) 1,941	94 (1) (9) 84 (0) 84	65 (1) (6) 58 (0) 58	159 (2) (15) 142 (0) 142	92 (1) (27) 64 (0) 64	88 (1) (26) 61 (0) 61	180 (2) (53) 125 (0) 125		
Residential - Apartments Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	220	400 DU	6.65 1% 20% 0% 0%	0.51 20% 10% 0% 0%	80% 1% 10% 0% 0%	0.62 65% 30% 0% 0%	35% 1% 30% 0% 0%	per DU	2,660 (27) (527) 2,106 (0) 2,106	41 (0) (4) 37 (0) 37	163 (2) (16) 145 (0) 145	204 (2) (20) 182 (0) 182	161 (2) (48) 111 (0) 111	87 (1) (26) 60 (0) 60	248 (3) (74) 171 (0) 171		
Residential - Condominiums Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Net New Trips	230	1,150 DU	5.81 1% 20% 0% 0%	0.44 17% 10% 0% 0%	83% 1% 10% 0% 0%	0.52 67% 30% 0% 0%	33% 1% 30% 0% 0%	per DU	6,682 (67) (1,323) 5,292 (0) 5,292	86 (1) (9) 76 (0) 76	420 (4) (42) 374 (0) 374	506 (5) (51) 450 (0) 450	401 (4) (119) 278 (0) 278	197 (2) (59) 136 (0) 136	598 (6) (178) 414 (0) 414		
Project Total Transit, Walk, Bike credit [b] Internal capture [c] Total Driveway Trips Pass-by credit [d] Project Total Trips									90,935 (910) (12,556) 77,469 (8,515) 68,954	1,748 (17) (128) 1,603 (198) 1,405	1,638 (16) (137) 1,485 (131) 1,354	3,386 (33) (265) 3,088 (329) 2,759	3,834 (39) (644) 3,151 (299) 2,852	3,401 (33) (513) 2,855 (287) 2,568	7,235 (72) (1,157) 6,006 (586) 5,420		

Notes:

- Source: Institute of Transportation Engineers (ITE), Trip Generation, 9th Edition, 2012, unless otherwise noted.
- A transit/walk/bike credit was informed by the built environment and walkability, local transit service, and on the results of MXD 2.0 Mixed Use Trip Generation Methodology to account for transit, walking, and biking access to the project site.
- Internal capture represents the percentage of trips between land uses that occur within the site. This percentage is informed by MXD 2.0 Mixed Use Trip Generation Methodology, which incorporated the findings of NCHRP Project 8-51 as described in "Improved Estimation for Internal Trip Capture for Mixed-use Developments," ITE Journal, August 2010.
- Pass-by credits were informed by ITE pass-by rates and the City of Los Angeles Traffic Study Guideline Pass-by recommendations. Rates were considered reasonable given the location of the site along a major regional thoroughfare.
- ITE Shopping Center trip generation equations used rather than trip generation rate:
Daily: $Ln(T) = 0.65 * Ln(X) + 5.83$, where T = trips, X = area in ksf
AM Peak Hour: $Ln(T) = 0.61 * Ln(X) + 2.24$, where T = trips, X = area in ksf
PM Peak Hour: $Ln(T) = 0.67 * Ln(X) + 3.31$, where T = trips, X = area in ksf
- ITE rates for Multiplex Movie Theater (445) for Friday PM peak hour of adjacent streets were used for the PM Peak hour analysis
Multiplex Movie Theater rate not available for Daily or AM analysis, ITE rates for Movie Theater without Matinee (443) were used for Daily and AM
- Weekday daily and AM peak hour rates not available from ITE. Weekday PM peak hour trips assumed to be 6% of the weekday daily trips, and weekday AM peak hour trips assumed to be 33% of the weekday PM peak hour trips.

**APPENDIX E2
THE ORIGINAL PROJECT COMPARATIVE ANALYSIS (2017 ANALYSIS METHODOLOGY)
EXISTING 2017 PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS AND MITIGATIONS**

ID	N/S Street Name	E/W Street Name	Intersection Control	Jurisdiction [1,3]	Analyzed Period	Existing		Existing + Project		Project Increase In V/C or Delay (s)	Significant Impact?	Existing + Project + Mitigations		Project Increase In V/C or Delay (s)	Significant Impact?
						V/C or Delay (s)	LOS	V/C or Delay (s)	LOS			V/C or Delay (s)	LOS		
1	Figueroa St	I-405 SB On Ramp	Unsignalized	City of Carson/ Caltrans	AM PM	0.9 7.9	B C	0.9 8.7	B D	0.0 0.8	NO NO				
2	Figueroa St	I-405 NB Off Ramp	TWSC	City of Carson/ Caltrans	AM PM	143.3 84.6	F F	162.0 104.1	F F	18.7 19.5	[1] [1]				
					AM PM	0.718 0.907	[1] [1]	0.728 0.926	[1] [1]	0.010 0.019	NO NO				
3	S Main St	I-405 SB On Ramp	Signalized	City of Carson/ Caltrans	AM PM	0.443 0.891	A D	0.472 0.939	A E	0.029 0.048	NO YES	0.447 0.731	A C	0.004 -0.160	NO NO
4	S Main St	I-405 NB Off Ramp	Signalized	City of Carson/ Caltrans	AM PM	0.547 0.663	A B	0.577 0.709	A C	0.030 0.046	NO NO				
5	S Vermont Ave	Del Amo Blvd	Signalized	City of Los Angeles	AM PM	0.683 0.742	B C	0.758 0.916	C E	0.075 0.174	YES YES	0.654 0.752	B C	-0.029 0.010	NO NO
				Los Angeles County	AM PM	A 0.796	C C	0.811 0.959	D E	0.071 0.163	YES YES	0.682 0.790	B C	-0.058 -0.006	NO NO
6	Hamilton Ave	Del Amo Blvd	AWSC	City of Los Angeles	AM PM						[1] [1]				
7	Figueroa St	Del Amo Blvd	Signalized	City of Carson	AM PM	0.828 0.770	D C	0.984 1.374	E F	0.156 0.604	YES YES	0.865 1.055	D F	0.037 0.285	NO YES
8	S Main St	E Del Amo Blvd	Signalized	City of Carson	AM PM	0.694 0.813	B D	0.857 1.100	D F	0.163 0.287	NO YES	0.781 0.920	C E	0.087 0.107	NO YES
9	Stamps Dr	Del Amo Blvd	Project Intersection Signalized	City of Carson	AM PM			0.568 0.916	A E						
10	S Avalon Blvd	E Del Amo Blvd	Signalized	City of Carson	AM PM	0.843 0.892	D D	0.927 1.026	E F	0.084 0.134	YES YES	0.814 0.911	D E	-0.029 0.019	NO NO
11	Hamilton Ave	I-110 SB Ramps	AWSC	Los Angeles County/ Caltrans	AM PM						[1] [1]				
12	Figueroa St	I-110 NB Ramps	Signalized	Los Angeles County/ Caltrans	AM PM	0.846 0.711	D C	1.022 1.109	F F	0.176 0.398	YES YES	0.745 0.766	C C	-0.101 0.055	NO YES
13	Main St	Lenardo Dr	Project Intersection Signalized	City of Carson	AM PM			0.476 0.689	A B						
14	Hamilton Ave	W Torrance Blvd	Signalized	Los Angeles County	AM PM	0.733 0.624	C B	0.747 0.663	C B	0.014 0.039	NO NO				
15	Figueroa St	W Torrance Blvd	Signalized	City of Carson	AM PM	0.795 0.782	C C	0.851 0.902	D E	0.056 0.120	NO YES				
16	S Main St	W Torrance Blvd	Signalized	City of Carson	AM PM	0.631 0.753	B C	0.708 0.855	C D	0.077 0.102	NO NO				
17	Lenardo Dr	I-405 SB Ramps	Project Intersection Signalized	City of Carson/ Caltrans	AM PM			0.568 0.552	A A						
18	S Avalon Blvd	I-405 SB Ramps	Signalized	City of Carson/ Caltrans	AM PM	0.631 0.584	B A	0.684 0.727	B C	0.053 0.143	NO NO				
19	S Avalon Blvd	I-405 NB Ramps	Signalized	City of Carson/ Caltrans	AM PM	0.506 0.598	A A	0.576 0.847	A D	0.070 0.249	NO NO				
20	S Main St	E 213th St	Signalized	City of Carson	AM PM	0.807 0.810	D D	0.865 0.929	D E	0.058 0.119	NO YES	0.676 0.826	B D	-0.131 0.016	NO NO
21	S Avalon Blvd	E 213th St	Signalized	City of Carson	AM PM	0.640 0.745	B C	0.674 0.816	B D	0.034 0.071	NO NO				
22	S Vermont Ave	W Carson St	Signalized	Los Angeles County	AM PM	0.876 0.747	D C	0.906 0.806	E D	0.030 0.059	YES YES	0.805 0.740	D C	-0.071 -0.007	NO NO
23	Figueroa St	W Carson St	Signalized	City of Carson	AM PM	0.942 1.063	E F	1.011 1.198	F F	0.069 0.135	YES YES	0.696 0.702	0 0	-0.246 -0.361	NO NO
24	S Main St	W Carson St	Signalized	City of Carson	AM PM	0.457 0.595	A A	0.546 0.710	A C	0.089 0.115	NO NO				
25	S Avalon Blvd	E Carson St	Signalized	City of Carson	AM PM	0.811 0.896	D D	0.892 1.019	D F	0.081 0.123	NO YES	0.781 0.918	C E	-0.030 0.022	NO YES
26	I-405 SB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM PM	0.621 0.667	B B	0.621 0.667	B B	0.000 0.000	NO NO				
27	I-405 NB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM PM	0.417 0.479	A A	0.440 0.510	A A	0.023 0.031	NO NO				

Notes
 TWSC Two-Way Stop Controlled
 AWSC All Way Stop Controlled
 [1] Methodology varies by Jurisdiction. If an intersection is located along a City border, both methodologies are applied.
 Signalized intersections within the City of Carson and Los Angeles County are analyzed with ICU methodology
 Signalized intersections within the City of Los Angeles are analyzed with CMA methodology
 Un-signalized intersections within the City of Los Angeles and Los Angeles County are not included in the impact analysis; instead, signal warrant analyses are conducted
 Un-signalized intersections within the City of Carson are analyzed with HCM 2010, if the worst approach LOS is E or F, then impacts are determined based on ICU v/c
 [2] Existing analysis evaluates LOS under construction lane configurations, future analysis assumes post-construction lane configurations
 [3] Mitigations at intersections under the jurisdiction of the City of Los Angeles, Los Angeles County, or Caltrans will require further coordination and detailed design review with the relevant jurisdiction to determine the feasibility of the mitigation. Any mitigation that is determined to be infeasible by the relevant jurisdiction would be determined to be significant and unavoidable.

**APPENDIX E3
THE ORIGINAL PROJECT COMPARATIVE ANALYSIS (2017 ANALYSIS METHODOLOGY)
FUTURE (2023) YEAR PLUS PROJECT INTERSECTION LEVELS OF SERVICE AND IMPACT ANALYSIS AND MITIGATIONS**

ID	N/S Street Name	E/W Street Name	Intersection Control	Jurisdiction [1,3]	Analyzed Period	Future		Future + Project		Project Increase In V/C or Delay (s)	Significant Impact?	Future + Project + Mitigations		Project Increase In V/C or Delay (s)	Significant Impact?
						V/C or Delay (s)	LOS	V/C or Delay (s)	LOS			V/C or Delay (s)	LOS		
1	Figueroa St	I-405 SB On Ramp	Unsignalized	City of Carson/ Caltrans	AM PM	0.9 9.1	B D	0.9 10.2	B D	0.0 1.1	NO NO				
2	Figueroa St	I-405 NB Off Ramp	TWSC	City of Carson/ Caltrans	AM	171.8	F	193.1	F	21.3	[1]				
					PM	102.4	F	124.7	F	22.3	[1]				
					AM	0.738	[1]	0.747	[1]	0.009	NO				
3	S Main St	I-405 SB On Ramp	Signalized	City of Carson/ Caltrans	PM	0.932	[1]	0.952	[1]	0.020	NO				
					AM	0.454	A	0.483	A	0.029	NO	0.457	A	0.003	NO
4	S Main St	I-405 NB Off Ramp	Signalized	City of Carson/ Caltrans	PM	0.563	A	0.592	A	0.029	NO				
					AM	0.682	B	0.728	C	0.046	NO				
5	S Vermont Ave	Del Amo Blvd	Signalized	City of Los Angeles	AM	0.711	C	0.784	C	0.073	YES	0.679	B	-0.032	NO
					PM	0.772	C	0.946	E	0.174	YES	0.778	C	0.006	NO
				Los Angeles County	AM	0.766	C	0.835	D	0.069	YES	0.706	C	-0.060	NO
6	Hamilton Ave	Del Amo Blvd	AWSC	City of Los Angeles	AM						[1]				
					PM							[1]			
7	Figueroa St	Del Amo Blvd	Signalized	City of Carson	AM	0.849	D	0.998	E	0.149	YES	0.886	D	0.037	NO
					PM	0.794	C	1.394	F	0.600	YES	1.072	F	0.278	YES
8	S Main St	E Del Amo Blvd	Signalized	City of Carson	AM	0.712	C	0.877	D	0.165	NO	0.799	C	0.087	NO
9	Stamps Dr	Del Amo Blvd	Project Intersection Signalized	City of Carson	AM			0.577	A						
					PM			0.916	E						
10	S Avalon Blvd	E Del Amo Blvd	Signalized	City of Carson	AM	0.867	D	0.953	E	0.086	YES	0.839	D	-0.028	NO
					PM	0.924	E	1.057	F	0.133	YES	0.941	E	0.017	NO
11	Hamilton Ave	I-110 SB Ramps	AWSC	Los Angeles County/ Caltrans	AM						[1]				
					PM							[1]			
12	Figueroa St	I-110 NB Ramps	Signalized	Los Angeles County/ Caltrans	AM	0.871	D	1.044	F	0.173	YES	0.764	C	-0.107	NO
					PM	0.732	C	1.129	F	0.397	YES	0.785	C	0.053	YES
13	Main St	Lenardo Dr	Project Intersection Signalized	City of Carson	AM			0.485	A						
14	Hamilton Ave	W Torrance Blvd	Signalized	Los Angeles County	AM	0.754	C	0.768	C	0.014	NO				
					PM	0.642	B	0.680	B	0.038	NO				
15	Figueroa St	W Torrance Blvd	Signalized	City of Carson	AM	0.818	D	0.874	D	0.056	NO	0.848	D	0.030	NO
					PM	0.805	D	0.925	E	0.120	YES	0.900	D	0.095	NO
16	S Main St	W Torrance Blvd	Signalized	City of Carson	AM	0.650	B	0.728	C	0.078	NO				
					PM	0.779	C	0.876	D	0.097	NO				
17	Lenardo Dr	I-405 SB Ramps	Project Intersection Signalized	City of Carson/ Caltrans	AM			0.581	A						
					PM			0.566	A						
18	S Avalon Blvd	I-405 SB Ramps	Signalized	City of Carson/ Caltrans	AM	0.661	B	0.712	C	0.051	NO				
					PM	0.609	B	0.747	C	0.138	NO				
19	S Avalon Blvd	I-405 NB Ramps	Signalized	City of Carson/ Caltrans	AM	0.526	A	0.596	A	0.070	NO				
					PM	0.619	B	0.868	D	0.249	NO				
20	S Main St	E 213th St	Signalized	City of Carson	AM	0.830	D	0.888	D	0.058	NO	0.693	B	-0.137	NO
					PM	0.832	D	0.951	E	0.119	YES	0.844	D	0.012	NO
21	S Avalon Blvd	E 213th St	Signalized	City of Carson	AM	0.660	B	0.695	B	0.035	NO				
					PM	0.775	C	0.847	D	0.072	NO				
22	S Vermont Ave	W Carson St	Signalized	Los Angeles County	AM	0.914	E	0.945	E	0.031	YES	0.837	D	-0.077	NO
					PM	0.777	C	0.835	D	0.058	YES	0.765	C	-0.012	NO
23	Figueroa St	W Carson St	Signalized	City of Carson	AM	0.712	C	0.725	C	0.013	NO				
					PM	0.702	C	0.723	C	0.021	NO				
24	S Main St	W Carson St	Signalized	City of Carson	AM	0.481	A	0.569	A	0.088	NO				
					PM	0.622	B	0.735	C	0.113	NO				
25	S Avalon Blvd	E Carson St	Signalized	City of Carson	AM	0.869	D	0.913	E	0.044	YES	0.836	D	-0.033	NO
					PM	0.950	E	1.011	F	0.061	YES	0.971	E	0.021	YES
26	I-405 SB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.652	B	0.652	B	0.000	NO				
					PM	0.703	C	0.703	C	0.000	NO				
27	I-405 NB Ramps	E Carson St	Signalized	City of Carson/ Caltrans	AM	0.385	A	0.408	A	0.023	NO				
					PM	0.496	A	0.527	A	0.031	NO				

Notes

TWSC Two-Way Stop Controlled

AWSC All Way Stop Controlled

[1] Methodology varies by Jurisdiction. If an intersection is located along a City border, both methodologies are applied.

Signalized intersections within the City of Carson and Los Angeles County are analyzed with ICU methodology

Signalized intersections within the City of Los Angeles are analyzed with CMA methodology

Un-signalized intersections within the City of Los Angeles and Los Angeles County are not included in the impact analysis; instead, signal warrant analyses are conducted

Un-signalized intersections within the City of Carson are analyzed with HCM 2010, if the worst approach LOS is E or F, then impacts are determined based on ICU v/c

[2] Existing analysis evaluates LOS under construction lane configurations, future analysis assumes post-construction lane configurations

[3] Mitigations at intersections under the jurisdiction of the City of Los Angeles, Los Angeles County, or Caltrans will require further coordination and detailed design review with the relevant jurisdiction to determine the feasibility of the mitigation. Any mitigation that is determined to be infeasible by the relevant jurisdiction would be determined to be significant and unavoidable.

**APPENDIX F:
SIGNAL WARRANT**



Major Street Del Amo Boulevard
 Minor Street Hamilton Avenue

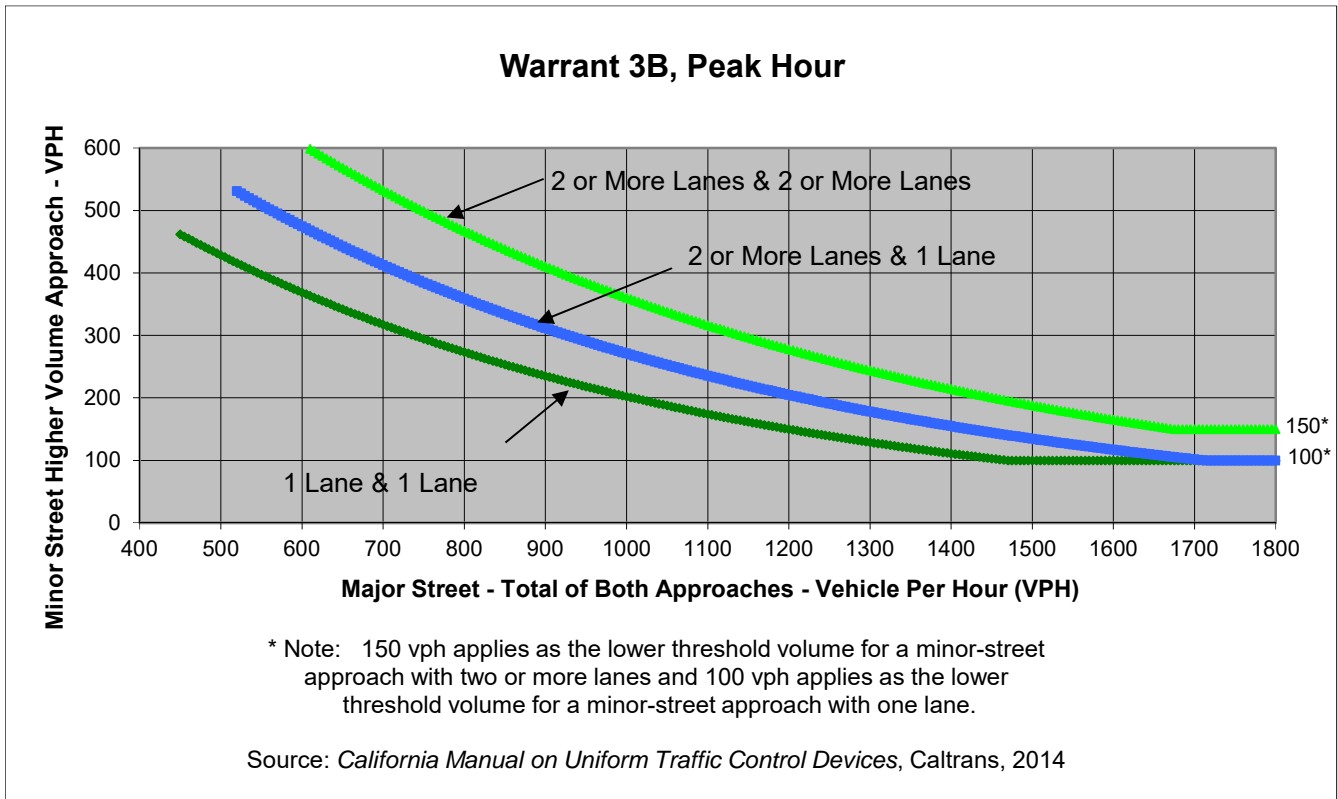
Project The District at South Bay
 Scenario Existing Conditions
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	78	65	23	333
Through	179	54	401	841
Right	154	17	54	397
Total	411	136	478	1,571

Major Street Direction

	North/South
x	East/West



	Major Street	Minor Street	Warrant Met
	Del Amo Boulevard	Hamilton Avenue	
Number of Approach Lanes	3	3	<u>YES</u>
Traffic Volume (VPH) *	2,049	411	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Del Amo Boulevard
 Minor Street Hamilton Avenue

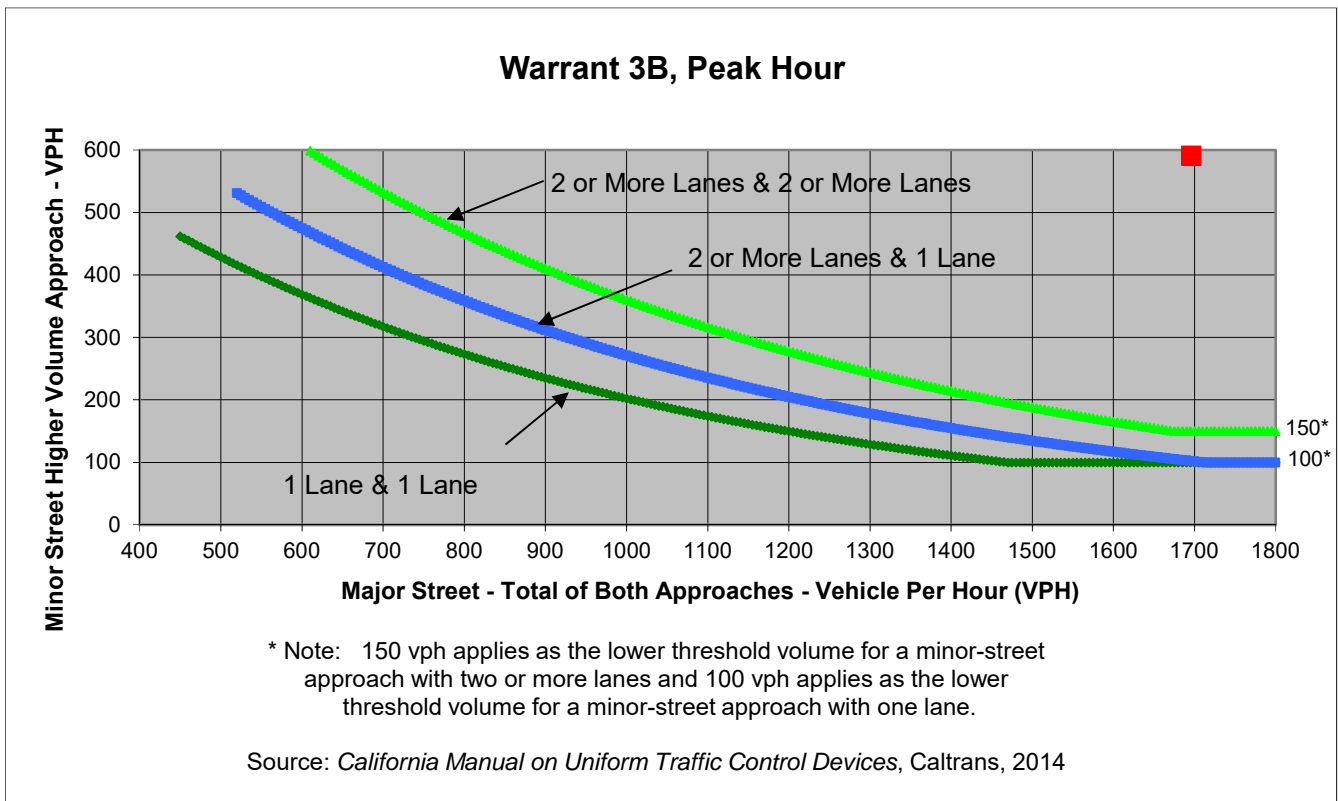
Project The District at South Bay
 Scenario Existing Conditions
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	15	295	1	300
Through	39	240	623	520
Right	146	56	160	92
Total	200	591	784	912

Major Street Direction

	North/South
x	East/West



	Major Street	Minor Street	Warrant Met
	Del Amo Boulevard	Hamilton Avenue	
Number of Approach Lanes	3	3	YES
Traffic Volume (VPH) *	1,696	591	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Del Amo Boulevard
 Minor Street Hamilton Avenue

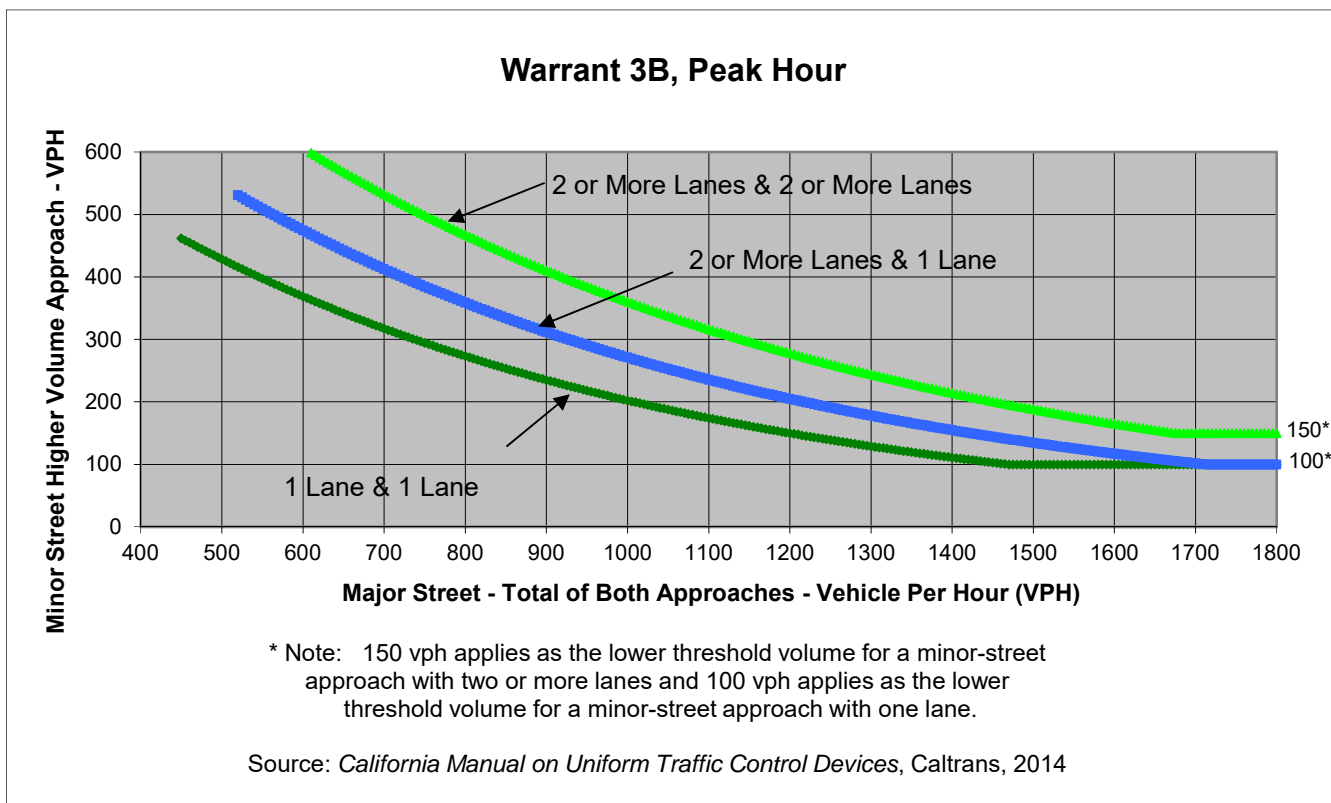
Project The District at South Bay
 Scenario Existing + Project Conditions
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	15	295	1	373
Through	39	240	707	743
Right	636	56	160	92
Total	690	591	868	1,208

Major Street Direction

	North/South
x	East/West



	Major Street	Minor Street	Warrant Met
	Del Amo Boulevard	Hamilton Avenue	
Number of Approach Lanes	3	3	<u>YES</u>
Traffic Volume (VPH) *	2,076	690	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Del Amo Boulevard
 Minor Street Hamilton Avenue

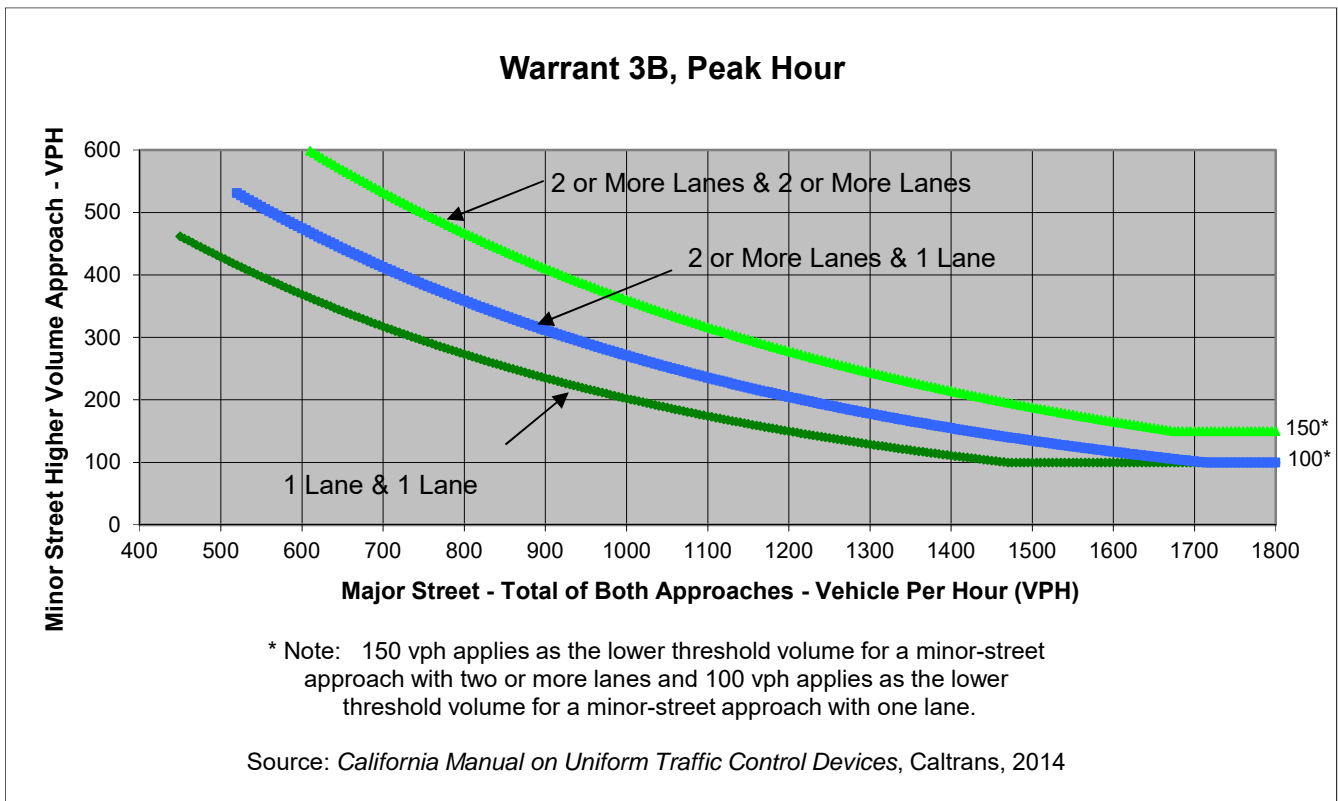
Project The District at South Bay
 Scenario Cumulative Conditions
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	80	67	24	350
Through	184	56	414	875
Right	168	18	56	409
Total	432	141	494	1,634

Major Street Direction

	North/South
x	East/West



	Major Street	Minor Street	Warrant Met
	Del Amo Boulevard	Hamilton Avenue	
Number of Approach Lanes	3	3	<u>YES</u>
Traffic Volume (VPH) *	2,128	432	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Del Amo Boulevard
 Minor Street Hamilton Avenue

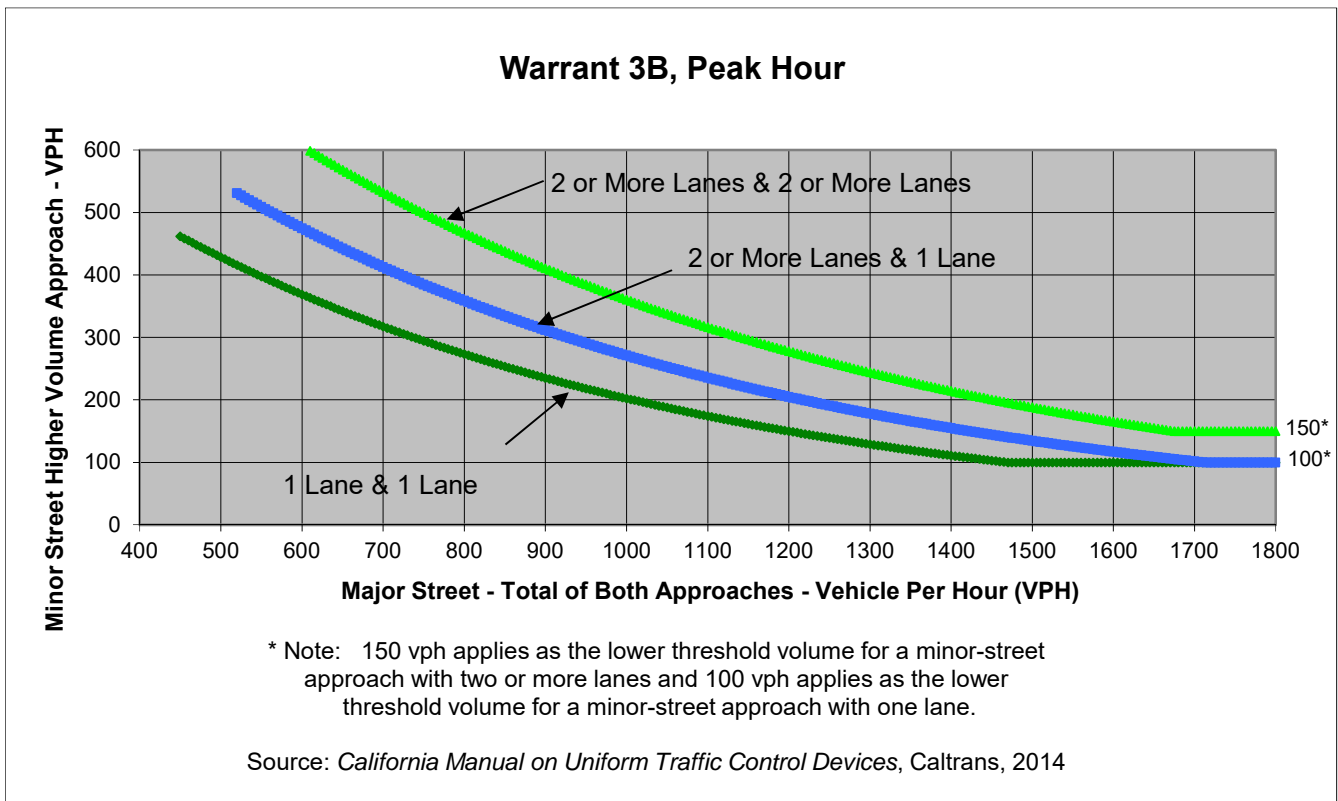
Project The District at South Bay
 Scenario Cumulative Conditions
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	15	304	1	316
Through	40	247	646	541
Right	178	58	165	95
Total	233	609	812	952

Major Street Direction

 North/South
 x East/West



	Major Street	Minor Street	Warrant Met
	Del Amo Boulevard	Hamilton Avenue	
Number of Approach Lanes	3	3	<u>YES</u>
Traffic Volume (VPH) *	1,764	609	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street Del Amo Boulevard
 Minor Street Hamilton Avenue

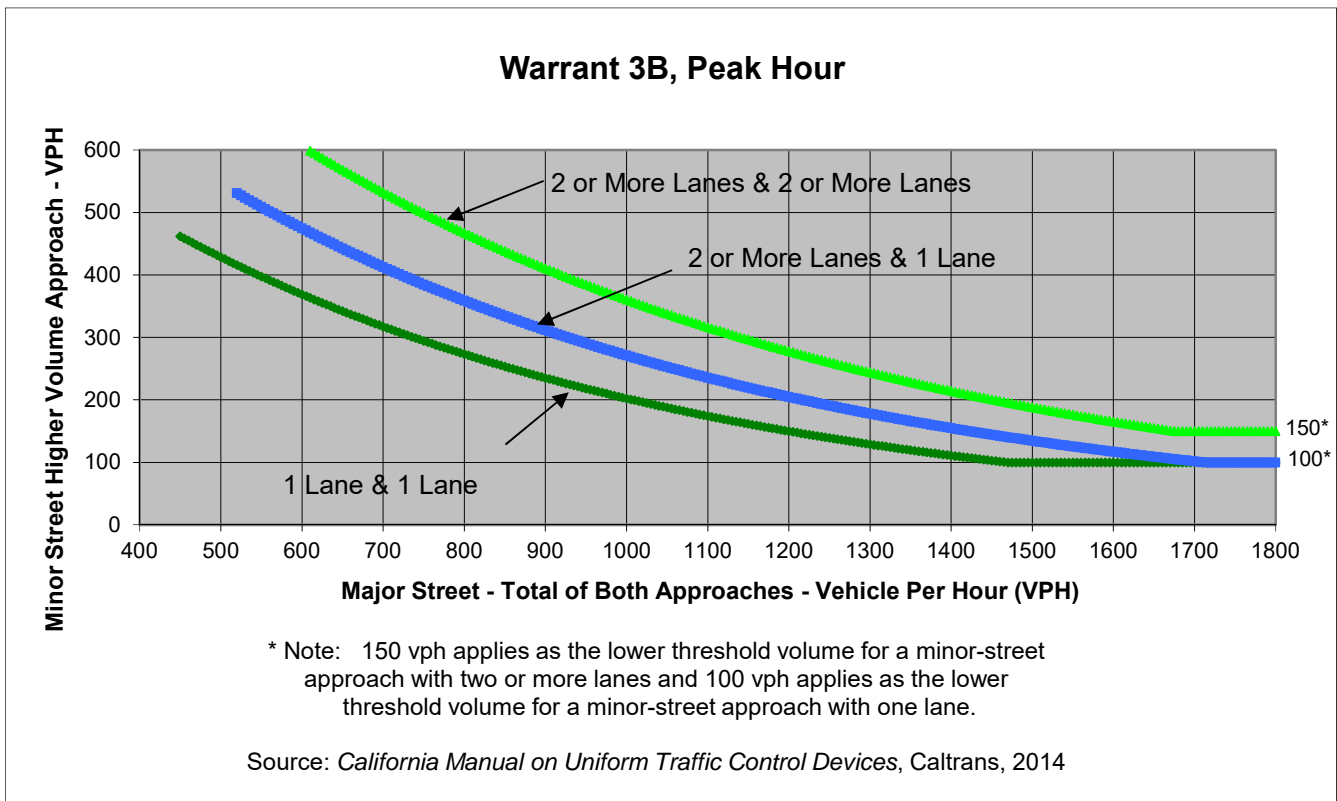
Project The District at South Bay
 Scenario Cumulative + Project Conditions
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	15	304	1	389
Through	40	247	730	764
Right	668	58	165	95
Total	723	609	896	1,248

Major Street Direction

 North/South
 x East/West



	Major Street	Minor Street	Warrant Met
	Del Amo Boulevard	Hamilton Avenue	
Number of Approach Lanes	3	3	<u>YES</u>
Traffic Volume (VPH) *	2,144	723	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street I-110 SB Ramps
 Minor Street Hamilton Avenue

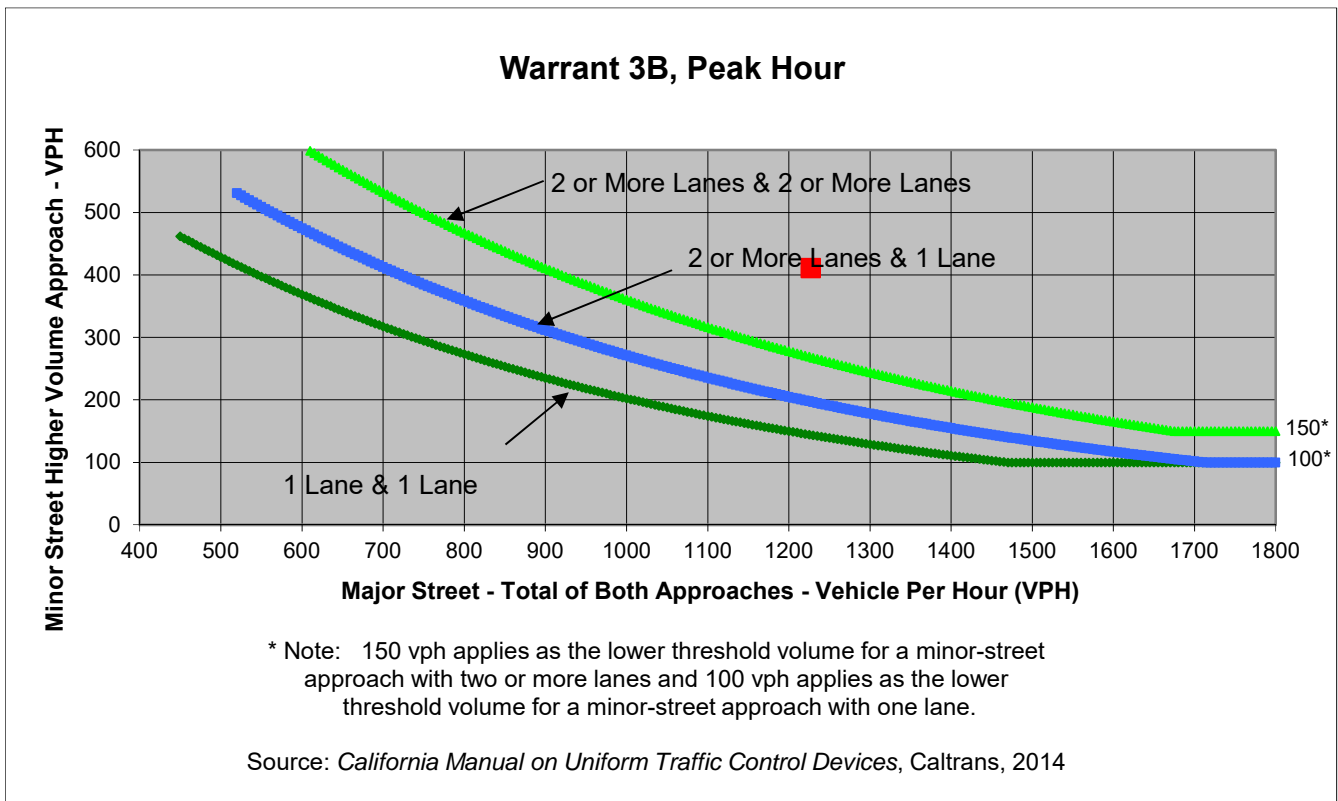
Project The District at South Bay
 Scenario Existing Conditions
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	315	0	864
Through	93	96	0	0
Right	121	0	0	363
Total	214	411	0	1,227

Major Street Direction

	North/South
x	East/West



	Major Street	Minor Street	Warrant Met
	I-110 SB Ramps	Hamilton Avenue	
Number of Approach Lanes	3	2	<u>YES</u>
Traffic Volume (VPH) *	1,227	411	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street I-110 SB Ramps
 Minor Street Hamilton Avenue

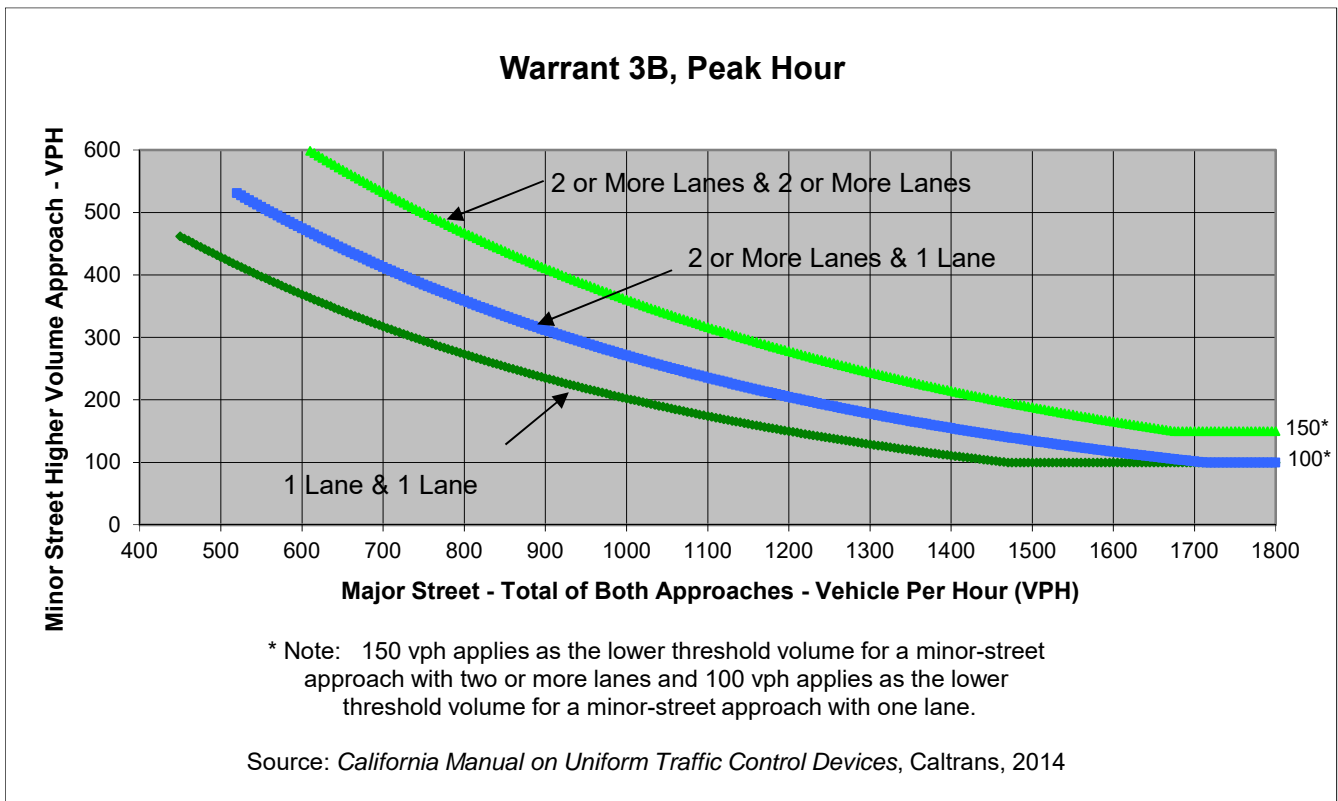
Project The District at South Bay
 Scenario Existing Conditions
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	588	0	369
Through	51	113	0	0
Right	411	0	0	144
Total	462	701	0	513

Major Street Direction

	North/South
x	East/West



	Major Street	Minor Street	Warrant Met
	I-110 SB Ramps	Hamilton Avenue	
Number of Approach Lanes	3	2	<u>YES</u>
Traffic Volume (VPH) *	513	701	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street I-110 SB Ramps
 Minor Street Hamilton Avenue

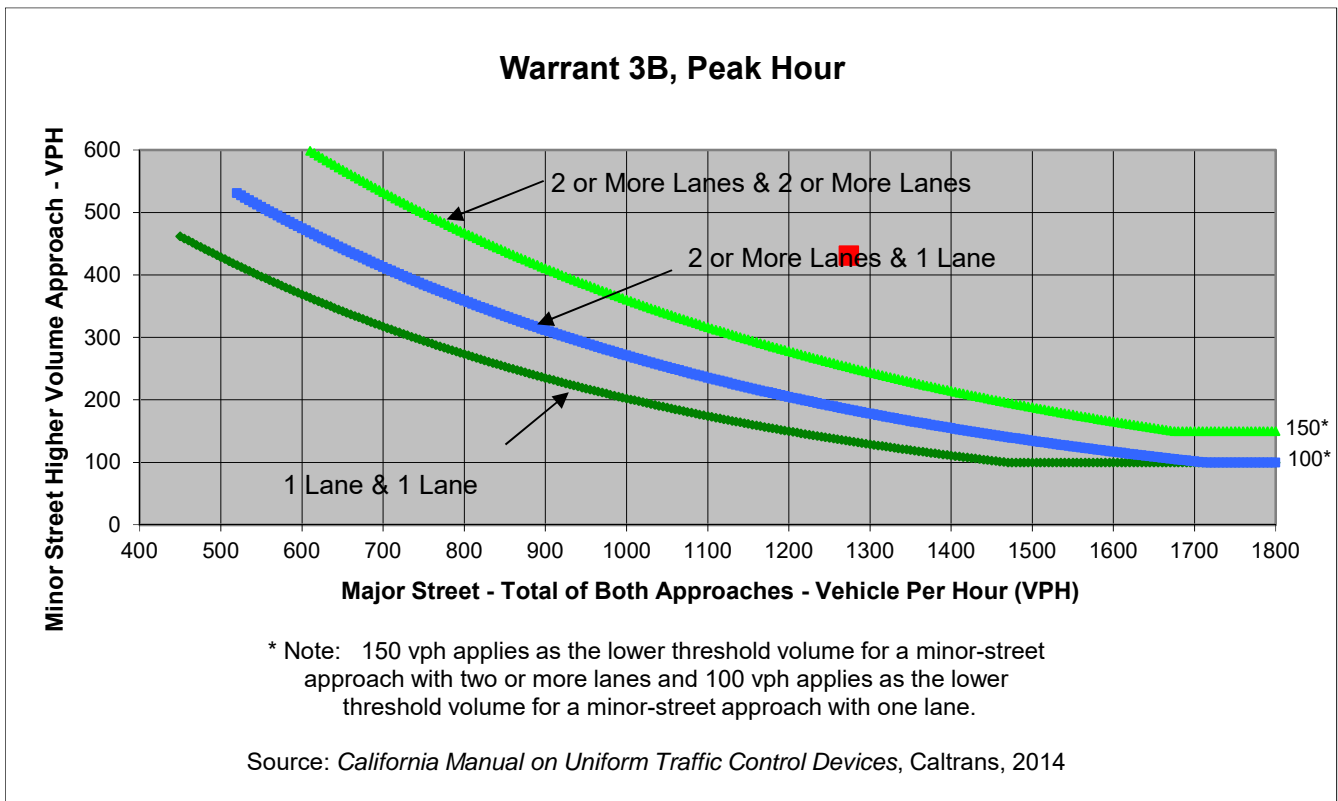
Project The District at South Bay
 Scenario Cumulative Conditions
 Peak Hour AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	332	0	891
Through	96	99	0	0
Right	125	0	0	383
Total	221	431	0	1,274

Major Street Direction

 North/South
 x East/West



	Major Street	Minor Street	Warrant Met
	I-110 SB Ramps	Hamilton Avenue	
Number of Approach Lanes	3	2	<u>YES</u>
Traffic Volume (VPH) *	1,274	431	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street I-110 SB Ramps
 Minor Street Hamilton Avenue

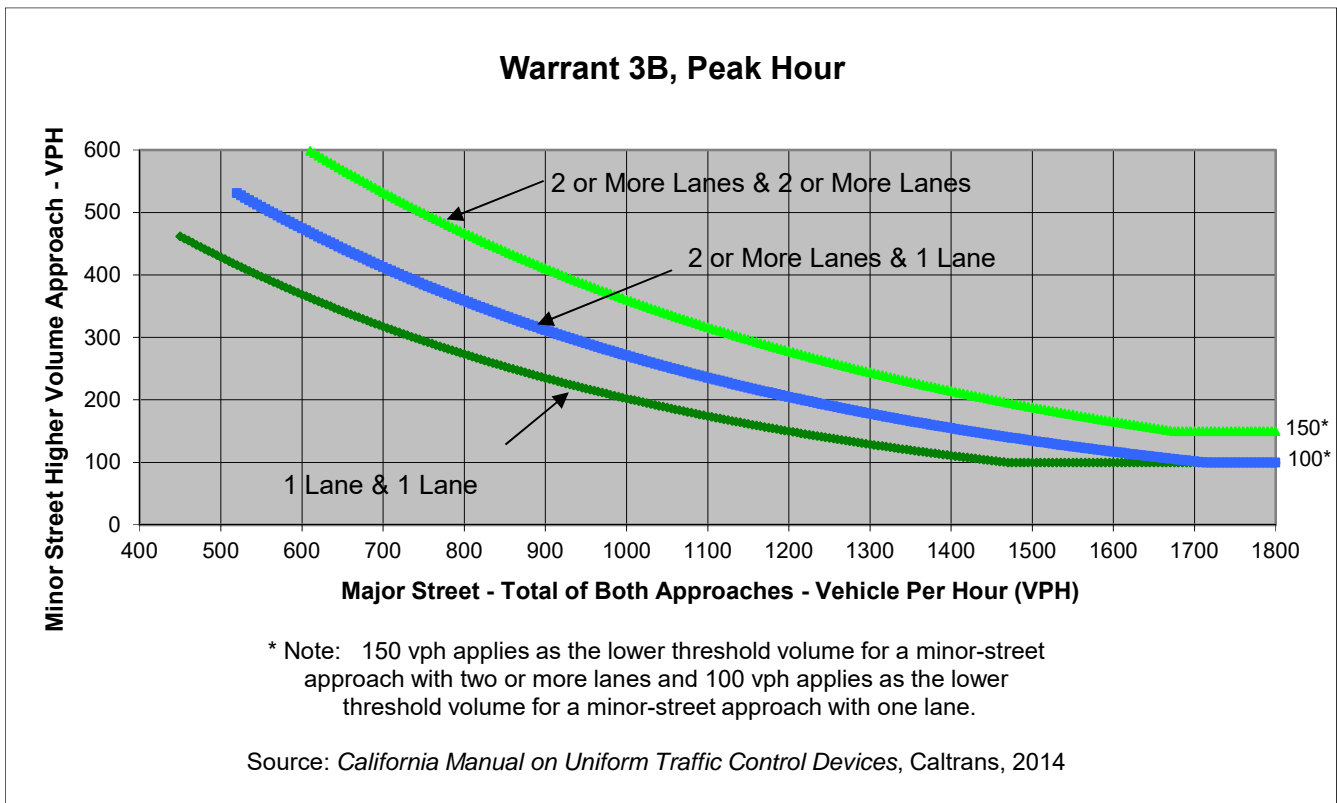
Project The District at South Bay
 Scenario Cumulative Conditions
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	613	0	384
Through	53	116	0	0
Right	423	0	0	176
Total	476	729	0	560

Major Street Direction

 North/South
 x East/West



	Major Street	Minor Street	Warrant Met
	I-110 SB Ramps	Hamilton Avenue	
Number of Approach Lanes	3	2	<u>YES</u>
Traffic Volume (VPH) *	560	729	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.



Major Street I-110 SB Ramps
 Minor Street Hamilton Avenue

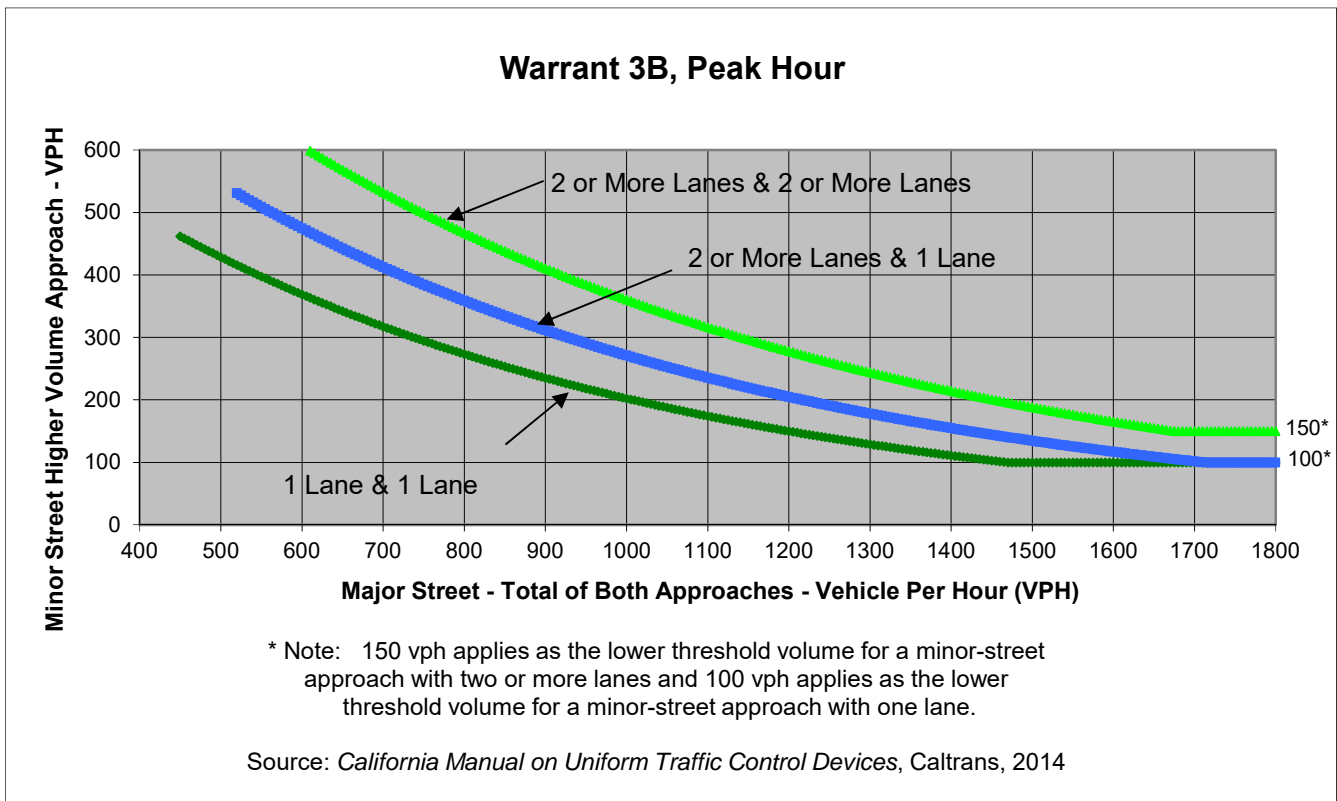
Project The District at South Bay
 Scenario Cumulative + Project Conditions
 Peak Hour PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	0	686	0	384
Through	53	116	0	0
Right	472	0	0	666
Total	525	802	0	1,050

Major Street Direction

 North/South
 x East/West



	Major Street	Minor Street	Warrant Met
	I-110 SB Ramps	Hamilton Avenue	
Number of Approach Lanes	3	2	<u>YES</u>
Traffic Volume (VPH) *	1,050	802	

* Note: Traffic Volume for Major Street is Total Volume of Both Approaches.
 Traffic Volume for Minor Street is the Volume of High Volume Approach.

**APPENDIX G:
FREEWAY RAMP QUEUING ANALYSIS**

EXISTING

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 33.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	197	292	900	0	0	693
Future Vol, veh/h	197	292	900	0	0	693
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	-	-	-	-
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	214	317	978	0	0	753

Major/Minor	Minor1	Minor2	Major1	Major2	Major3	Major4
Conflicting Flow All	1355	489	0	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	377	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	-	-
Pot Cap-1 Maneuver	~ 141	525	-	0	0	-
Stage 1	325	-	-	0	0	-
Stage 2	663	-	-	0	0	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	~ 141	525	-	-	-	-
Mov Cap-2 Maneuver	~ 141	-	-	-	-	-
Stage 1	325	-	-	-	-	-
Stage 2	663	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	143.3	0	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 141	525	-
HCM Lane V/C Ratio	- 1.519	0.605	-
HCM Control Delay (s)	-\$ 323.5	21.8	-
HCM Lane LOS	- F	C	-
HCM 95th %tile Q(veh)	- 14.6	4	-

Notes

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

HCM 2010 Signalized Intersection Summary
 4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	77	377	190	29	653	0	0	648	83
Future Volume (veh/h)	0	0	0	77	377	190	29	653	0	0	648	83
Number				3	8	18	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	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				84	410	207	32	710	0	0	704	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				132	662	356	161	1802	0	0	1190	0
Arrive On Green				0.33	0.33	0.33	0.09	0.51	0.00	0.00	0.34	0.00
Sat Flow, veh/h				404	2022	1087	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				383	0	318	32	710	0	0	704	0
Grp Sat Flow(s),veh/h/ln				1843	0	1671	1774	1770	0	0	1770	0
Q Serve(g_s), s				9.7	0.0	8.7	0.9	6.8	0.0	0.0	9.1	0.0
Cycle Q Clear(g_c), s				9.7	0.0	8.7	0.9	6.8	0.0	0.0	9.1	0.0
Prop In Lane				0.22		0.65	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				603	0	547	161	1802	0	0	1190	0
V/C Ratio(X)				0.63	0.00	0.58	0.20	0.39	0.00	0.00	0.59	0.00
Avail Cap(c_a), veh/h				603	0	547	161	1802	0	0	1190	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	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.7	0.0	15.4	23.1	8.3	0.0	0.0	15.1	0.0
Incr Delay (d2), s/veh				5.0	0.0	4.5	2.7	0.6	0.0	0.0	2.2	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(50%),veh/ln				5.7	0.0	4.7	0.6	3.4	0.0	0.0	4.8	0.0
LnGrp Delay(d),s/veh				20.7	0.0	19.8	25.9	8.9	0.0	0.0	17.3	0.0
LnGrp LOS				C		B	C	A			B	
Approach Vol, veh/h					701			742			704	
Approach Delay, s/veh					20.3			9.7			17.3	
Approach LOS					C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.5			9.5	23.0		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		28.0			5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s		8.8			2.9	11.1		11.7				
Green Ext Time (p_c), s		9.8			0.0	5.0		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				15.6								
HCM 2010 LOS				B								

Intersection

Intersection Delay, s/veh 47.7

Intersection LOS E

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	864	363	0	93	121	0	315	96
Future Vol, veh/h	0	864	363	0	93	121	0	315	96
Peak Hour Factor	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
Mvmt Flow	0	939	395	0	101	132	0	342	104
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	50.8	15.6	55
HCM LOS	F	C	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	91%	0%
Vol Thru, %	100%	0%	0%	0%	0%	9%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	121	432	432	363	347	64
LT Vol	0	0	432	432	0	315	0
Through Vol	93	0	0	0	0	32	64
RT Vol	0	121	0	0	363	0	0
Lane Flow Rate	101	132	470	470	395	377	70
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.265	0.319	0.992	0.992	0.507	0.945	0.165
Departure Headway (Hd)	9.45	8.727	7.609	7.609	4.623	9.016	8.552
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	379	410	479	479	777	404	419
Service Time	7.227	6.504	5.349	5.349	2.361	6.773	6.309
HCM Lane V/C Ratio	0.266	0.322	0.981	0.981	0.508	0.933	0.167
HCM Control Delay	15.6	15.6	67	67	12.1	62.7	13
HCM Lane LOS	C	C	F	F	B	F	B
HCM 95th-tile Q	1	1.4	13	13	2.9	10.6	0.6

HCM 2010 Signalized Intersection Summary
 12: Figueroa St & I-110 NB Ramps

08/15/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	TT		TT	↑↑	↑↑	T		
Traffic Volume (veh/h)	569	310	653	688	474	138		
Future Volume (veh/h)	569	310	653	688	474	138		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	478	488	710	748	515	150		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	494	450	860	2098	986	441		
Arrive On Green	0.28	0.28	0.25	0.59	0.28	0.28		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	478	488	710	748	515	150		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	18.6	19.5	13.6	7.6	8.6	5.3		
Cycle Q Clear(g_c), s	18.6	19.5	13.6	7.6	8.6	5.3		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	494	450	860	2098	986	441		
V/C Ratio(X)	0.97	1.08	0.83	0.36	0.52	0.34		
Avail Cap(c_a), veh/h	494	450	860	2098	986	441		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.9	25.3	24.8	7.4	21.3	20.1		
Incr Delay (d2), s/veh	33.1	67.2	8.9	0.5	2.0	2.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	18.6	23.3	7.5	3.8	4.4	2.5		
LnGrp Delay(d),s/veh	58.1	92.4	33.7	7.8	23.3	22.2		
LnGrp LOS	E	F	C	A	C	C		
Approach Vol, veh/h	966			1458	665			
Approach Delay, s/veh	75.4			20.4	23.1			
Approach LOS	E			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		46.0		24.0	22.0	24.0		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		41.5		19.5	17.5	19.5		
Max Q Clear Time (g_c+I1), s		9.6		21.5	15.6	10.6		
Green Ext Time (p_c), s		11.6		0.0	0.6	5.6		
Intersection Summary								
HCM 2010 Ctrl Delay			38.2					
HCM 2010 LOS			D					
Notes								

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	456	3	459	0	0	0	0	1010	121	0	673	244
Future Volume (veh/h)	456	3	459	0	0	0	0	1010	121	0	673	244
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	0	1863	1863
Adj Flow Rate, veh/h	496	3	0				0	1098	132	0	732	265
Adj No. of Lanes	2	2	1				0	2	0	0	2	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	1273	1310	586				0	1432	172	0	1593	712
Arrive On Green	0.37	0.37	0.00				0.00	0.45	0.45	0.00	0.45	0.45
Sat Flow, veh/h	3442	3539	1583				0	3276	382	0	3632	1583
Grp Volume(v), veh/h	496	3	0				0	610	620	0	732	265
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1795	0	1770	1583
Q Serve(g_s), s	5.3	0.0	0.0				0.0	14.5	14.5	0.0	7.2	5.5
Cycle Q Clear(g_c), s	5.3	0.0	0.0				0.0	14.5	14.5	0.0	7.2	5.5
Prop In Lane	1.00		1.00				0.00		0.21	0.00		1.00
Lane Grp Cap(c), veh/h	1273	1310	586				0	796	808	0	1593	712
V/C Ratio(X)	0.39	0.00	0.00				0.00	0.77	0.77	0.00	0.46	0.37
Avail Cap(c_a), veh/h	1273	1310	586				0	796	808	0	1593	712
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	0.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.6	9.9	0.0				0.0	11.5	11.6	0.0	9.5	9.1
Incr Delay (d2), s/veh	0.9	0.0	0.0				0.0	6.9	6.9	0.0	1.0	1.5
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(50%),veh/ln	2.6	0.0	0.0				0.0	8.5	8.6	0.0	3.7	5.9
LnGrp Delay(d),s/veh	12.5	9.9	0.0				0.0	18.5	18.5	0.0	10.5	10.6
LnGrp LOS	B	A						B	B		B	B
Approach Vol, veh/h		499						1230			997	
Approach Delay, s/veh		12.5						18.5			10.5	
Approach LOS		B						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		27.0		23.0		27.0						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		22.5		18.5		22.5						
Max Q Clear Time (g_c+I1), s		16.5		7.3		9.2						
Green Ext Time (p_c), s		5.2		1.5		10.4						
Intersection Summary												
HCM 2010 Ctrl Delay			14.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖			↖↖↖	↖
Traffic Volume (veh/h)	0	0	0	90	2	540	321	1185	0	0	785	222
Future Volume (veh/h)	0	0	0	90	2	540	321	1185	0	0	785	222
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				99	0	0	349	1288	0	0	853	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1064	0	475	602	1947	0	0	1526	475
Arrive On Green				0.30	0.00	0.00	0.17	0.55	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				99	0	0	349	1288	0	0	853	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				1.2	0.0	0.0	5.6	15.4	0.0	0.0	8.5	0.0
Cycle Q Clear(g_c), s				1.2	0.0	0.0	5.6	15.4	0.0	0.0	8.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	475	602	1947	0	0	1526	475
V/C Ratio(X)				0.09	0.00	0.00	0.58	0.66	0.00	0.00	0.56	0.00
Avail Cap(c_a), veh/h				1064	0	475	602	1947	0	0	1526	475
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.1	0.0	0.0	22.7	9.6	0.0	0.0	17.7	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	4.0	1.8	0.0	0.0	1.5	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(50%),veh/ln				0.6	0.0	0.0	3.0	7.8	0.0	0.0	4.2	0.0
LnGrp Delay(d),s/veh				15.3	0.0	0.0	26.8	11.3	0.0	0.0	19.1	0.0
LnGrp LOS				B			C	B			B	
Approach Vol, veh/h					99			1637			853	
Approach Delay, s/veh					15.3			14.6			19.1	
Approach LOS					B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.5			15.0	22.5		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		33.0			10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s		17.4			7.6	10.5		3.2				
Green Ext Time (p_c), s		12.2			0.4	6.5		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				16.1								
HCM 2010 LOS				B								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	570	610	108	1035	19	95	0	216	0	0	10
Future Volume (veh/h)	7	570	610	108	1035	19	95	0	216	0	0	10
Number	5	2	12	1	6	16	3	8	18			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	8	620	663	117	1125	21	103	0	235			
Adj No. of Lanes	1	1	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	359	910	1050	198	3470	65	310	0	277			
Arrive On Green	0.49	0.49	0.49	0.11	0.68	0.68	0.17	0.00	0.17			
Sat Flow, veh/h	489	1863	1583	1774	5140	96	1774	0	1583			
Grp Volume(v), veh/h	8	620	663	117	742	404	103	0	235			
Grp Sat Flow(s),veh/h/ln	489	1863	1583	1774	1695	1846	1774	0	1583			
Q Serve(g_s), s	0.5	15.3	14.6	3.8	5.5	5.5	3.1	0.0	8.6			
Cycle Q Clear(g_c), s	0.5	15.3	14.6	3.8	5.5	5.5	3.1	0.0	8.6			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	359	910	1050	198	2288	1246	310	0	277			
V/C Ratio(X)	0.02	0.68	0.63	0.59	0.32	0.32	0.33	0.00	0.85			
Avail Cap(c_a), veh/h	359	910	1050	198	2288	1246	310	0	277			
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	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.0	11.8	5.8	25.3	4.1	4.1	21.7	0.0	24.0			
Incr Delay (d2), s/veh	0.1	4.1	2.9	12.3	0.4	0.7	2.9	0.0	26.2			
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(50%),veh/ln	0.1	8.8	10.4	2.5	2.6	2.9	1.7	0.0	5.8			
LnGrp Delay(d),s/veh	8.1	15.9	8.7	37.6	4.4	4.7	24.5	0.0	50.2			
LnGrp LOS	A	B	A	D	A	A	C		D			
Approach Vol, veh/h		1291			1263			338				
Approach Delay, s/veh		12.2			7.6			42.4				
Approach LOS		B			A			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2				6		8				
Phs Duration (G+Y+Rc), s	1.2	33.8				45.0		15.0				
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5				
Max Green Setting (Gmax), s	30.0	29.3				40.5		10.5				
Max Q Clear Time (g_c+1), s	15.0	17.3				7.5		10.6				
Green Ext Time (p_c), s	0.0	9.7				20.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				13.7								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary

27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	658	39	14	751	245	7	4	4	21	15	422
Future Volume (veh/h)	83	658	39	14	751	245	7	4	4	21	15	422
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	90	715	42	15	816	266	8	4	4	23	16	0
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1699	100	362	1158	518	431	195	533	390	246	533
Arrive On Green	0.09	0.50	0.50	0.33	0.33	0.33	0.34	0.34	0.34	0.34	0.34	0.00
Sat Flow, veh/h	1774	3398	199	705	3539	1583	958	580	1583	851	732	1583
Grp Volume(v), veh/h	90	372	385	15	816	266	12	0	4	39	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1828	705	1770	1583	1538	0	1583	1583	0	1583
Q Serve(g_s), s	2.7	7.3	7.3	0.8	11.1	7.5	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	7.3	7.3	0.8	11.1	7.5	0.2	0.0	0.1	0.8	0.0	0.0
Prop In Lane	1.00		0.11	1.00		1.00	0.67		1.00	0.59		1.00
Lane Grp Cap(c), veh/h	161	885	914	362	1158	518	626	0	533	636	0	533
V/C Ratio(X)	0.56	0.42	0.42	0.04	0.70	0.51	0.02	0.00	0.01	0.06	0.00	0.00
Avail Cap(c_a), veh/h	161	885	914	362	1158	518	626	0	533	636	0	533
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.9	8.7	8.7	12.7	16.2	15.0	12.2	0.0	12.1	12.4	0.0	0.0
Incr Delay (d2), s/veh	13.2	1.5	1.4	0.2	3.6	3.6	0.1	0.0	0.0	0.2	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	3.9	4.0	0.2	5.9	3.8	0.1	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	37.2	10.2	10.1	12.9	19.8	18.6	12.2	0.0	12.2	12.6	0.0	0.0
LnGrp LOS	D	B	B	B	B	B	B		B	B		
Approach Vol, veh/h		847			1097			16			39	
Approach Delay, s/veh		13.0			19.4			12.2			12.6	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0		32.0		23.0	9.5	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5		27.5		18.5	5.0	18.0				
Max Q Clear Time (g_c+I1), s		2.2		9.3		2.8	4.7	13.1				
Green Ext Time (p_c), s		0.2		11.2		0.2	0.0	3.9				
Intersection Summary												
HCM 2010 Ctrl Delay				16.5								
HCM 2010 LOS				B								

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	77	131	747	0	0	1675
Future Vol, veh/h	77	131	747	0	0	1675
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	-	-	-	-
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	84	142	812	0	0	1821

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1722	406	0
Stage 1	812	-	-
Stage 2	910	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 80	594	0
Stage 1	397	-	0
Stage 2	353	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 80	594	-
Mov Cap-2 Maneuver	~ 80	-	-
Stage 1	397	-	-
Stage 2	353	-	-

Approach	WB	NB	SB
HCM Control Delay, s	84.6	0	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 80	594	-
HCM Lane V/C Ratio	- 1.046	0.24	-
HCM Control Delay (s)	- 206.3	13	-
HCM Lane LOS	- F	B	-
HCM 95th %tile Q(veh)	- 5.8	0.9	-

Notes

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

HCM 2010 Signalized Intersection Summary
 4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	59	120	235	24	605	0	1	1223	60
Future Volume (veh/h)	0	0	0	59	120	235	24	605	0	1	1223	60
Number				3	8	18	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	1863	1863	0	1900	1863	1900
Adj Flow Rate, veh/h				64	130	255	26	658	0	1	1329	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	2	2	2
Cap, veh/h				167	340	438	136	2069	0	56	1522	0
Arrive On Green				0.28	0.28	0.28	0.08	0.58	0.00	0.44	0.44	0.00
Sat Flow, veh/h				605	1228	1583	1774	3632	0	0	3557	0
Grp Volume(v), veh/h				194	0	255	26	658	0	713	617	0
Grp Sat Flow(s),veh/h/ln				1833	0	1583	1774	1770	0	1862	1610	0
Q Serve(g_s), s				5.6	0.0	9.0	0.9	6.2	0.0	0.0	22.7	0.0
Cycle Q Clear(g_c), s				5.6	0.0	9.0	0.9	6.2	0.0	22.7	22.7	0.0
Prop In Lane				0.33		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				507	0	438	136	2069	0	872	706	0
V/C Ratio(X)				0.38	0.00	0.58	0.19	0.32	0.00	0.82	0.87	0.00
Avail Cap(c_a), veh/h				507	0	438	136	2069	0	872	706	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				19.0	0.0	20.3	28.1	6.9	0.0	16.6	16.6	0.0
Incr Delay (d2), s/veh				2.2	0.0	5.5	3.1	0.4	0.0	8.4	14.1	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(50%),veh/ln				3.1	0.0	4.6	0.6	3.0	0.0	13.5	12.7	0.0
LnGrp Delay(d),s/veh				21.2	0.0	25.8	31.2	7.3	0.0	25.0	30.7	0.0
LnGrp LOS				C		C	C	A		C	C	
Approach Vol, veh/h					449			684			1330	
Approach Delay, s/veh					23.8			8.2			27.7	
Approach LOS					C			A			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.5			9.5	33.0		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		38.0			5.0	28.5		18.0				
Max Q Clear Time (g_c+I1), s		8.2			2.9	24.7		11.0				
Green Ext Time (p_c), s		17.9			0.0	3.3		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				21.6								
HCM 2010 LOS				C								

HCM 2010 AWSC
 11: Hamilton Ave & I-110 SB Ramps

08/15/2017

Intersection

Intersection Delay, s/veh 127

Intersection LOS F

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	369	144	0	51	411	0	588	113
Future Vol, veh/h	0	369	144	0	51	411	0	588	113
Peak Hour Factor	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
Mvmt Flow	0	401	157	0	55	447	0	639	123
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	16.3	46.3	261.2
HCM LOS	C	E	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	94%	0%
Vol Thru, %	100%	0%	0%	0%	0%	6%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	411	185	185	144	626	75
LT Vol	0	0	185	185	0	588	0
Through Vol	51	0	0	0	0	38	75
RT Vol	0	411	0	0	144	0	0
Lane Flow Rate	55	447	201	201	157	680	82
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.122	0.9	0.45	0.45	0.223	1.575	0.179
Departure Headway (Hd)	8.972	8.246	8.918	8.918	5.869	8.337	7.856
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	402	442	407	407	615	435	454
Service Time	6.672	5.946	6.618	6.618	3.569	6.119	5.637
HCM Lane V/C Ratio	0.137	1.011	0.494	0.494	0.255	1.563	0.181
HCM Control Delay	12.9	50.5	18.7	18.7	10.2	291.2	12.4
HCM Lane LOS	B	F	C	C	B	F	B
HCM 95th-tile Q	0.4	9.7	2.3	2.3	0.8	37.5	0.6

HCM 2010 Signalized Intersection Summary

12: Figueroa St & I-110 NB Ramps

08/15/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	TT		TT	↑↑	↑↑	T		
Traffic Volume (veh/h)	350	189	627	453	742	217		
Future Volume (veh/h)	350	189	627	453	742	217		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	292	299	682	492	807	236		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	491	447	768	2069	1035	463		
Arrive On Green	0.28	0.28	0.22	0.58	0.29	0.29		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	292	299	682	492	807	236		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	9.3	10.7	12.5	4.4	13.6	8.1		
Cycle Q Clear(g_c), s	9.3	10.7	12.5	4.4	13.6	8.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	491	447	768	2069	1035	463		
V/C Ratio(X)	0.59	0.67	0.89	0.24	0.78	0.51		
Avail Cap(c_a), veh/h	491	447	768	2069	1035	463		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	20.3	20.9	24.5	6.5	21.1	19.1		
Incr Delay (d2), s/veh	5.2	7.7	14.5	0.3	5.8	4.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.3	10.2	7.4	2.2	7.5	4.0		
LnGrp Delay(d),s/veh	25.6	28.6	38.9	6.8	26.9	23.1		
LnGrp LOS	C	C	D	A	C	C		
Approach Vol, veh/h	591			1174	1043			
Approach Delay, s/veh	27.1			25.5	26.1			
Approach LOS	C			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.5		22.5	19.0	23.5		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		38.0		18.0	14.5	19.0		
Max Q Clear Time (g_c+I1), s		6.4		12.7	14.5	15.6		
Green Ext Time (p_c), s		12.5		1.1	0.0	2.6		
Intersection Summary								
HCM 2010 Ctrl Delay			26.0					
HCM 2010 LOS			C					
Notes								

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔↔	↑↑	↗					↑↑			↑↑	↗
Traffic Volume (veh/h)	171	128	264	0	0	0	0	1145	189	0	932	382
Future Volume (veh/h)	171	128	264	0	0	0	0	1145	189	0	932	382
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	0	1863	1863
Adj Flow Rate, veh/h	186	139	0				0	1245	205	0	1013	415
Adj No. of Lanes	2	2	1				0	2	0	0	2	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	1038	1068	478				0	1670	273	0	1941	868
Arrive On Green	0.30	0.30	0.00				0.00	0.55	0.55	0.00	0.37	0.37
Sat Flow, veh/h	3442	3539	1583				0	3139	498	0	3632	1583
Grp Volume(v), veh/h	186	139	0				0	720	730	0	1013	415
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1775	0	1770	1583
Q Serve(g_s), s	2.4	1.7	0.0				0.0	18.6	18.9	0.0	13.4	12.1
Cycle Q Clear(g_c), s	2.4	1.7	0.0				0.0	18.6	18.9	0.0	13.4	12.1
Prop In Lane	1.00		1.00				0.00		0.28	0.00		1.00
Lane Grp Cap(c), veh/h	1038	1068	478				0	970	973	0	1941	868
V/C Ratio(X)	0.18	0.13	0.00				0.00	0.74	0.75	0.00	0.52	0.48
Avail Cap(c_a), veh/h	1038	1068	478				0	970	973	0	1941	868
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	0.67	0.67
Upstream Filter(I)	1.00	1.00	0.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	15.5	15.2	0.0				0.0	10.3	10.4	0.0	12.8	12.4
Incr Delay (d2), s/veh	0.4	0.3	0.0				0.0	5.1	5.3	0.0	1.0	1.9
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(50%),veh/ln	1.2	0.9	0.0				0.0	10.2	10.6	0.0	6.8	11.6
LnGrp Delay(d),s/veh	15.8	15.5	0.0				0.0	15.4	15.7	0.0	13.8	14.3
LnGrp LOS	B	B						B	B		B	B
Approach Vol, veh/h		325						1450			1428	
Approach Delay, s/veh		15.7						15.6			14.0	
Approach LOS		B						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		37.4		22.6		37.4						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		32.9		18.1		32.9						
Max Q Clear Time (g_c+I1), s		20.9		4.4		15.4						
Green Ext Time (p_c), s		10.8		1.2		15.2						
Intersection Summary												
HCM 2010 Ctrl Delay			14.9									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖			↖↖↖	↖
Traffic Volume (veh/h)	0	0	0	91	0	385	374	932	0	0	1226	506
Future Volume (veh/h)	0	0	0	91	0	385	374	932	0	0	1226	506
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				99	0	0	407	1013	0	0	1333	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1064	0	475	562	1947	0	0	1585	493
Arrive On Green				0.30	0.00	0.00	0.11	0.37	0.00	0.00	0.31	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				99	0	0	407	1013	0	0	1333	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				1.2	0.0	0.0	6.9	13.4	0.0	0.0	14.7	0.0
Cycle Q Clear(g_c), s				1.2	0.0	0.0	6.9	13.4	0.0	0.0	14.7	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	475	562	1947	0	0	1585	493
V/C Ratio(X)				0.09	0.00	0.00	0.72	0.52	0.00	0.00	0.84	0.00
Avail Cap(c_a), veh/h				1064	0	475	562	1947	0	0	1585	493
HCM Platoon Ratio				1.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.1	0.0	0.0	25.4	12.8	0.0	0.0	19.3	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	7.9	1.0	0.0	0.0	5.6	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(50%),veh/ln				0.6	0.0	0.0	3.9	6.8	0.0	0.0	7.6	0.0
LnGrp Delay(d),s/veh				15.3	0.0	0.0	33.3	13.8	0.0	0.0	24.8	0.0
LnGrp LOS				B			C	B			C	
Approach Vol, veh/h					99			1420			1333	
Approach Delay, s/veh					15.3			19.4			24.8	
Approach LOS					B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.5			14.3	23.2		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		33.0			9.8	18.7		18.0				
Max Q Clear Time (g_c+I1), s		15.4			8.9	16.7		3.2				
Green Ext Time (p_c), s		14.2			0.2	1.9		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				21.8								
HCM 2010 LOS				C								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1021	786	106	954	21	31	0	55	0	0	7
Future Volume (veh/h)	15	1021	786	106	954	21	31	0	55	0	0	7
Number	7	4	14	3	8	18	5	2	12			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	16	1110	854	115	1037	23	34	0	60			
Adj No. of Lanes	1	1	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	384	1068	1231	128	3561	79	363	0	324			
Arrive On Green	0.57	0.57	0.57	0.07	0.70	0.70	0.20	0.00	0.20			
Sat Flow, veh/h	530	1863	1583	1774	5119	113	1774	0	1583			
Grp Volume(v), veh/h	16	1110	854	115	687	373	34	0	60			
Grp Sat Flow(s),veh/h/ln	530	1863	1583	1774	1695	1843	1774	0	1583			
Q Serve(g_s), s	1.2	51.6	23.4	5.8	7.0	7.0	1.4	0.0	2.8			
Cycle Q Clear(g_c), s	1.2	51.6	23.4	5.8	7.0	7.0	1.4	0.0	2.8			
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00			
Lane Grp Cap(c), veh/h	384	1068	1231	128	2358	1282	363	0	324			
V/C Ratio(X)	0.04	1.04	0.69	0.90	0.29	0.29	0.09	0.00	0.19			
Avail Cap(c_a), veh/h	384	1068	1231	128	2358	1282	363	0	324			
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	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.4	19.2	4.8	41.4	5.2	5.2	29.0	0.0	29.6			
Incr Delay (d2), s/veh	0.2	38.3	3.2	55.7	0.3	0.6	0.5	0.0	1.3			
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(50%),veh/ln	0.2	37.5	20.6	4.8	3.3	3.7	0.7	0.0	1.3			
LnGrp Delay(d),s/veh	8.7	57.5	8.1	97.1	5.5	5.8	29.6	0.0	30.9			
LnGrp LOS	A	F	A	F	A	A	C		C			
Approach Vol, veh/h		1980			1175			94				
Approach Delay, s/veh		35.8			14.6			30.4				
Approach LOS		D			B			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		22.9	11.0	56.1				67.1				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.4	6.5	51.6				62.6				
Max Q Clear Time (g_c+I1), s		4.8	7.8	53.6				9.0				
Green Ext Time (p_c), s		0.2	0.0	0.0				40.6				
Intersection Summary												
HCM 2010 Ctrl Delay			28.0									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	932	35	23	652	379	35	20	20	38	8	398
Future Volume (veh/h)	118	932	35	23	652	379	35	20	20	38	8	398
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	128	1013	38	25	709	412	38	22	22	41	9	0
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	1803	68	281	1068	478	406	214	525	471	93	525
Arrive On Green	0.14	0.52	0.52	0.30	0.30	0.30	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1774	3479	130	535	3539	1583	928	646	1583	1091	281	1583
Grp Volume(v), veh/h	128	515	536	25	709	412	60	0	22	50	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1840	535	1770	1583	1574	0	1583	1371	0	1583
Q Serve(g_s), s	4.0	11.9	11.9	2.1	10.5	14.7	0.0	0.0	0.6	0.9	0.0	0.0
Cycle Q Clear(g_c), s	4.0	11.9	11.9	2.1	10.5	14.7	1.3	0.0	0.6	2.3	0.0	0.0
Prop In Lane	1.00		0.07	1.00		1.00	0.63		1.00	0.82		1.00
Lane Grp Cap(c), veh/h	251	917	954	281	1068	478	620	0	525	564	0	525
V/C Ratio(X)	0.51	0.56	0.56	0.09	0.66	0.86	0.10	0.00	0.04	0.09	0.00	0.00
Avail Cap(c_a), veh/h	251	917	954	281	1068	478	620	0	525	564	0	525
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.8	9.8	9.8	15.3	18.3	19.8	13.8	0.0	13.6	14.2	0.0	0.0
Incr Delay (d2), s/veh	7.2	2.5	2.4	0.6	3.3	18.3	0.3	0.0	0.1	0.3	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	6.4	6.6	0.3	5.6	8.8	0.7	0.0	0.3	0.6	0.0	0.0
LnGrp Delay(d),s/veh	31.0	12.3	12.2	16.0	21.6	38.0	14.2	0.0	13.7	14.5	0.0	0.0
LnGrp LOS	C	B	B	B	C	D	B		B	B		
Approach Vol, veh/h		1179			1146			82			50	
Approach Delay, s/veh		14.3			27.4			14.0			14.5	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		24.4		35.6		24.4	13.0	22.6				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.9		31.1		19.9	8.5	18.1				
Max Q Clear Time (g_c+I1), s		3.3		13.9		4.3	6.0	16.7				
Green Ext Time (p_c), s		0.5		12.3		0.5	0.1	1.2				
Intersection Summary												
HCM 2010 Ctrl Delay				20.4								
HCM 2010 LOS				C								

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	701	32	710	794
v/c Ratio	0.59	0.20	0.39	0.67
Control Delay	15.0	26.4	9.1	18.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.0	26.4	9.1	18.4
Queue Length 50th (ft)	78	10	67	110
Queue Length 95th (ft)	126	31	101	163
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1184	160	1801	1188
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	0.59	0.20	0.39	0.67

Intersection Summary

Queues

12: Figueroa St & I-110 NB Ramps

08/15/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	955	710	748	515	150
v/c Ratio	0.92	0.83	0.36	0.52	0.27
Control Delay	36.7	34.9	8.0	23.6	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.7	34.9	8.0	23.6	5.4
Queue Length 50th (ft)	174	148	77	98	0
Queue Length 95th (ft)	#291	#232	108	143	38
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1035	858	2098	985	549
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	0.92	0.83	0.36	0.52	0.27

Intersection Summary

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

Queues

18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	496	3	499	1230	732	265
v/c Ratio	0.39	0.00	0.75	0.78	0.46	0.31
Control Delay	12.8	10.0	19.5	15.6	10.7	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	10.0	19.5	15.6	10.7	2.5
Queue Length 50th (ft)	53	0	89	144	72	0
Queue Length 95th (ft)	84	2	#228	213	109	30
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1270	1309	665	1586	1592	858
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.00	0.75	0.78	0.46	0.31

Intersection Summary

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

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	50	50	587	349	1288	853	241
v/c Ratio	0.10	0.10	0.37	0.58	0.66	0.56	0.37
Control Delay	15.9	15.9	0.7	27.2	11.6	19.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	15.9	15.9	0.7	27.2	12.1	19.4	4.6
Queue Length 50th (ft)	13	13	0	60	155	93	0
Queue Length 95th (ft)	35	35	0	96	217	129	43
Internal Link Dist (ft)		901			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	506	1583	600	1946	1525	643
Starvation Cap Reductn	0	0	0	0	235	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.10	0.37	0.58	0.75	0.56	0.37

Intersection Summary

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	620	663	117	1146	103	235	11
v/c Ratio	0.04	0.68	0.53	0.59	0.33	0.33	0.50	0.06
Control Delay	8.7	16.6	3.6	39.9	4.4	25.2	7.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.7	16.6	3.6	39.9	4.4	25.2	7.9	0.0
Queue Length 50th (ft)	1	160	34	41	50	33	0	0
Queue Length 95th (ft)	8	264	69	#102	67	72	51	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45			50			660	
Base Capacity (vph)	214	909	1241	197	3425	309	470	191
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.68	0.53	0.59	0.33	0.33	0.50	0.06

Intersection Summary

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

Queues

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	90	757	15	816	266	12	4	39	459
v/c Ratio	0.56	0.43	0.07	0.70	0.38	0.02	0.01	0.07	0.65
Control Delay	40.1	9.5	13.9	20.2	4.1	12.5	0.0	12.9	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	9.5	13.9	20.2	4.1	12.5	0.0	12.9	11.4
Queue Length 50th (ft)	29	74	3	120	0	3	0	8	46
Queue Length 95th (ft)	#81	109	14	175	41	11	0	25	129
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	160	1763	221	1158	697	563	611	555	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.43	0.07	0.70	0.38	0.02	0.01	0.07	0.65

Intersection Summary

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

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	449	26	658	1395
v/c Ratio	0.42	0.19	0.32	0.94
Control Delay	9.5	31.7	7.4	32.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.5	31.7	7.4	32.6
Queue Length 50th (ft)	31	10	62	264
Queue Length 95th (ft)	65	31	89	#415
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1072	136	2068	1477
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	0.42	0.19	0.32	0.94

Intersection Summary

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

Queues

12: Figueroa St & I-110 NB Ramps

08/15/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	585	682	492	807	236
v/c Ratio	0.57	0.89	0.24	0.78	0.38
Control Delay	16.8	41.1	6.9	27.6	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	41.1	6.9	27.6	4.8
Queue Length 50th (ft)	71	135	44	153	0
Queue Length 95th (ft)	117	#226	65	#217	45
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1035	765	2068	1034	629
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	0.57	0.89	0.24	0.78	0.38

Intersection Summary

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

Queues

18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	186	139	287	1450	1013	415
v/c Ratio	0.18	0.13	0.53	0.75	0.52	0.39
Control Delay	16.1	15.7	15.6	13.2	2.3	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.1	15.7	15.6	13.2	2.3	1.1
Queue Length 50th (ft)	25	18	55	184	13	0
Queue Length 95th (ft)	45	36	120	261	m17	m0
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1035	1067	543	1922	1940	1055
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.13	0.53	0.75	0.52	0.39

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	49	50	418	407	1013	1333	550
v/c Ratio	0.10	0.10	0.26	0.73	0.52	0.84	0.63
Control Delay	15.9	15.9	0.4	30.5	13.6	25.6	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	15.9	0.4	30.5	13.6	25.6	5.6
Queue Length 50th (ft)	13	13	0	77	142	162	0
Queue Length 95th (ft)	35	35	0	m108	201	#219	61
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	504	1583	560	1946	1584	871
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.10	0.26	0.73	0.52	0.84	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	16	1110	854	115	1060	34	60	8
v/c Ratio	0.06	1.04	0.64	0.91	0.30	0.09	0.16	0.06
Control Delay	9.3	59.4	4.9	102.2	5.5	30.0	7.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	59.4	4.9	102.2	5.5	30.0	7.0	0.0
Queue Length 50th (ft)	4	-688	92	66	72	16	0	0
Queue Length 95th (ft)	13	#929	161	#167	90	41	26	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45			50			660	
Base Capacity (vph)	275	1068	1333	127	3528	361	381	127
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	1.04	0.64	0.91	0.30	0.09	0.16	0.06

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

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	128	1051	25	709	412	60	22	50	433
v/c Ratio	0.51	0.57	0.16	0.66	0.54	0.12	0.04	0.10	0.56
Control Delay	31.8	11.4	18.7	21.9	5.1	14.7	0.1	14.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.8	11.4	18.7	21.9	5.1	14.7	0.1	14.6	6.2
Queue Length 50th (ft)	44	124	7	116	0	15	0	12	13
Queue Length 95th (ft)	90	175	24	168	55	37	0	33	71
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	250	1829	152	1067	765	521	597	494	778
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.57	0.16	0.66	0.54	0.12	0.04	0.10	0.56

Intersection Summary

EXISTING PLUS PROJECT

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 37.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	197	292	926	0	0	723
Future Vol, veh/h	197	292	926	0	0	723
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	-	-	-	-
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	214	317	1007	0	0	786

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1400	503	0
Stage 1	1007	-	-
Stage 2	393	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 131	514	0
Stage 1	314	-	0
Stage 2	651	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 131	514	-
Mov Cap-2 Maneuver	~ 131	-	-
Stage 1	314	-	-
Stage 2	651	-	-

Approach	WB	NB	SB
HCM Control Delay, s	165.4	0	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 131	514	-
HCM Lane V/C Ratio	- 1.635	0.617	-
HCM Control Delay (s)	- \$ 376.8	22.7	-
HCM Lane LOS	- F	C	-
HCM 95th %tile Q(veh)	- 15.6	4.1	-

Notes

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

HCM 2010 Signalized Intersection Summary
 4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	86	377	190	29	731	0	0	736	83
Future Volume (veh/h)	0	0	0	86	377	190	29	731	0	0	736	83
Number				3	8	18	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	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				93	410	207	32	795	0	0	800	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				145	654	351	161	1802	0	0	1190	0
Arrive On Green				0.33	0.33	0.33	0.09	0.51	0.00	0.00	0.34	0.00
Sat Flow, veh/h				442	1998	1074	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				387	0	323	32	795	0	0	800	0
Grp Sat Flow(s),veh/h/ln				1841	0	1673	1774	1770	0	0	1770	0
Q Serve(g_s), s				9.9	0.0	8.8	0.9	7.8	0.0	0.0	10.7	0.0
Cycle Q Clear(g_c), s				9.9	0.0	8.8	0.9	7.8	0.0	0.0	10.7	0.0
Prop In Lane				0.24		0.64	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				602	0	548	161	1802	0	0	1190	0
V/C Ratio(X)				0.64	0.00	0.59	0.20	0.44	0.00	0.00	0.67	0.00
Avail Cap(c_a), veh/h				602	0	548	161	1802	0	0	1190	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	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.8	0.0	15.4	23.1	8.5	0.0	0.0	15.6	0.0
Incr Delay (d2), s/veh				5.2	0.0	4.6	2.7	0.8	0.0	0.0	3.0	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(50%),veh/ln				5.8	0.0	4.7	0.6	4.0	0.0	0.0	5.6	0.0
LnGrp Delay(d),s/veh				21.0	0.0	20.0	25.9	9.3	0.0	0.0	18.7	0.0
LnGrp LOS				C		C	C	A			B	
Approach Vol, veh/h					710			827			800	
Approach Delay, s/veh					20.5			10.0			18.7	
Approach LOS					C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.5			9.5	23.0		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		28.0			5.0	18.5		18.0				
Max Q Clear Time (g_c+I1), s		9.8			2.9	12.7		11.9				
Green Ext Time (p_c), s		10.7			0.0	4.4		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				16.2								
HCM 2010 LOS				B								

Intersection

Intersection Delay, s/veh 63.7
 Intersection LOS F

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	864	637	0	93	142	0	366	96
Future Vol, veh/h	0	864	637	0	93	142	0	366	96
Peak Hour Factor	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
Mvmt Flow	0	939	692	0	101	154	0	398	104
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	56.4	18.1	110.5
HCM LOS	F	C	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	92%	0%
Vol Thru, %	100%	0%	0%	0%	0%	8%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	93	142	432	432	637	398	64
LT Vol	0	0	432	432	0	366	0
Through Vol	93	0	0	0	0	32	64
RT Vol	0	142	0	0	637	0	0
Lane Flow Rate	101	154	470	470	692	433	70
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.28	0.398	0.999	0.999	0.91	1.155	0.177
Departure Headway (Hd)	10.461	9.734	8.036	8.036	5.036	9.608	9.138
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	346	372	455	455	727	381	394
Service Time	8.161	7.434	5.736	5.736	2.736	7.329	6.859
HCM Lane V/C Ratio	0.292	0.414	1.033	1.033	0.952	1.136	0.178
HCM Control Delay	17.2	18.7	70.6	70.6	37.2	126.1	13.8
HCM Lane LOS	C	C	F	F	E	F	B
HCM 95th-tile Q	1.1	1.9	12.9	12.9	12.1	16.9	0.6

HCM 2010 Signalized Intersection Summary
 12: Figueroa St & I-110 NB Ramps

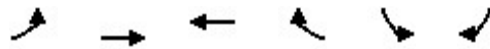
08/17/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	613	342	653	688	489	449		
Future Volume (veh/h)	613	342	653	688	489	449		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	519	529	710	748	532	488		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	610	555	796	1924	907	406		
Arrive On Green	0.34	0.34	0.23	0.54	0.26	0.26		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	519	529	710	748	532	488		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	21.7	25.6	16.0	9.8	10.5	20.5		
Cycle Q Clear(g_c), s	21.7	25.6	16.0	9.8	10.5	20.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	610	555	796	1924	907	406		
V/C Ratio(X)	0.85	0.95	0.89	0.39	0.59	1.20		
Avail Cap(c_a), veh/h	610	555	796	1924	907	406		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	24.4	25.6	29.8	10.6	26.0	29.8		
Incr Delay (d2), s/veh	14.0	28.2	14.4	0.6	2.8	112.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.9	23.7	9.2	4.9	5.4	21.6		
LnGrp Delay(d),s/veh	38.3	53.8	44.2	11.2	28.8	142.3		
LnGrp LOS	D	D	D	B	C	F		
Approach Vol, veh/h	1048			1458	1020			
Approach Delay, s/veh	46.1			27.2	83.1			
Approach LOS	D			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.0		32.0	23.0	25.0		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		43.5		27.5	18.5	20.5		
Max Q Clear Time (g_c+I1), s		11.8		27.6	18.0	22.5		
Green Ext Time (p_c), s		14.0		0.0	0.2	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			49.0					
HCM 2010 LOS			D					
Notes								

HCM 2010 Signalized Intersection Summary
 17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑	↗	↖↗	↗		
Traffic Volume (veh/h)	0	445	338	280	919	151		
Future Volume (veh/h)	0	445	338	280	919	151		
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	1863	1863	1863		
Adj Flow Rate, veh/h	0	484	367	0	999	0		
Adj No. of Lanes	0	3	2	1	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	2	2	2	2	2		
Cap, veh/h	0	959	668	299	2397	1103		
Arrive On Green	0.00	0.19	0.19	0.00	0.70	0.00		
Sat Flow, veh/h	0	5421	3632	1583	3442	1583		
Grp Volume(v), veh/h	0	484	367	0	999	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	1583	1721	1583		
Q Serve(g_s), s	0.0	6.7	7.3	0.0	9.7	0.0		
Cycle Q Clear(g_c), s	0.0	6.7	7.3	0.0	9.7	0.0		
Prop In Lane	0.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	959	668	299	2397	1103		
V/C Ratio(X)	0.00	0.50	0.55	0.00	0.42	0.00		
Avail Cap(c_a), veh/h	0	1722	1198	536	2397	1103		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(l)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	28.5	28.7	0.0	5.1	0.0		
Incr Delay (d2), s/veh	0.0	0.4	0.7	0.0	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.2	3.6	0.0	4.8	0.0		
LnGrp Delay(d),s/veh	0.0	28.9	29.4	0.0	5.6	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		484	367		999			
Approach Delay, s/veh		28.9	29.4		5.6			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				19.3		59.0		19.3
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				26.5		54.5		26.5
Max Q Clear Time (g_c+I1), s				8.7		11.7		9.3
Green Ext Time (p_c), s				5.5		4.4		5.4
Intersection Summary								
HCM 2010 Ctrl Delay			16.4					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖			↖↖↖	↖
Traffic Volume (veh/h)	0	0	0	260	2	568	429	1194	0	0	858	222
Future Volume (veh/h)	0	0	0	260	2	568	429	1194	0	0	858	222
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				284	0	0	466	1298	0	0	933	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1064	0	475	602	1947	0	0	1526	475
Arrive On Green				0.30	0.00	0.00	0.12	0.37	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				284	0	0	466	1298	0	0	933	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				3.7	0.0	0.0	7.9	18.4	0.0	0.0	9.4	0.0
Cycle Q Clear(g_c), s				3.7	0.0	0.0	7.9	18.4	0.0	0.0	9.4	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	475	602	1947	0	0	1526	475
V/C Ratio(X)				0.27	0.00	0.00	0.77	0.67	0.00	0.00	0.61	0.00
Avail Cap(c_a), veh/h				1064	0	475	602	1947	0	0	1526	475
HCM Platoon Ratio				1.00	1.00	1.00	0.67	0.67	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				16.0	0.0	0.0	25.3	14.3	0.0	0.0	18.0	0.0
Incr Delay (d2), s/veh				0.6	0.0	0.0	9.4	1.8	0.0	0.0	1.8	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(50%),veh/ln				1.9	0.0	0.0	4.5	9.5	0.0	0.0	4.7	0.0
LnGrp Delay(d),s/veh				16.6	0.0	0.0	34.7	16.2	0.0	0.0	19.8	0.0
LnGrp LOS				B			C	B			B	
Approach Vol, veh/h					284			1764			933	
Approach Delay, s/veh					16.6			21.1			19.8	
Approach LOS					B			C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.5			15.0	22.5		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		33.0			10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s		20.4			9.9	11.4		5.7				
Green Ext Time (p_c), s		10.4			0.1	5.8		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				20.3								
HCM 2010 LOS				C								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	647	610	108	1113	19	95	0	216	0	0	10
Future Volume (veh/h)	7	647	610	108	1113	19	95	0	216	0	0	10
Number	7	4	14	3	8	18	5	2	12			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	8	703	663	117	1210	21	103	0	235			
Adj No. of Lanes	1	1	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	299	812	1131	165	3052	53	494	0	441			
Arrive On Green	0.44	0.44	0.44	0.09	0.59	0.59	0.28	0.00	0.28			
Sat Flow, veh/h	451	1863	1583	1774	5148	89	1774	0	1583			
Grp Volume(v), veh/h	8	703	663	117	797	434	103	0	235			
Grp Sat Flow(s),veh/h/ln	451	1863	1583	1774	1695	1847	1774	0	1583			
Q Serve(g_s), s	0.7	23.9	14.4	4.5	8.8	8.8	3.1	0.0	8.8			
Cycle Q Clear(g_c), s	0.7	23.9	14.4	4.5	8.8	8.8	3.1	0.0	8.8			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	299	812	1131	165	2010	1095	494	0	441			
V/C Ratio(X)	0.03	0.87	0.59	0.71	0.40	0.40	0.21	0.00	0.53			
Avail Cap(c_a), veh/h	299	812	1131	165	2010	1095	494	0	441			
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	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.3	17.9	4.9	30.8	7.6	7.6	19.3	0.0	21.4			
Incr Delay (d2), s/veh	0.2	12.0	2.2	22.8	0.6	1.1	1.0	0.0	4.6			
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(50%),veh/ln	0.1	14.8	13.0	3.2	4.1	4.7	1.6	0.0	4.4			
LnGrp Delay(d),s/veh	11.5	29.9	7.1	53.6	8.2	8.7	20.3	0.0	25.9			
LnGrp LOS	B	C	A	D	A	A	C		C			
Approach Vol, veh/h		1374			1348			338				
Approach Delay, s/veh		18.8			12.3			24.2				
Approach LOS		B			B			C				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		24.0	11.0	35.0				46.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.5	6.5	30.5				41.5				
Max Q Clear Time (g_c+I1), s		10.8	6.5	25.9				10.8				
Green Ext Time (p_c), s		0.7	0.0	4.2				21.7				
Intersection Summary												
HCM 2010 Ctrl Delay			16.5									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	735	39	14	829	245	7	4	4	21	15	422
Future Volume (veh/h)	83	735	39	14	829	245	7	4	4	21	15	422
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	90	799	42	15	901	266	8	4	4	23	16	0
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	1710	90	344	1158	518	431	195	533	390	246	533
Arrive On Green	0.09	0.50	0.50	0.33	0.33	0.33	0.34	0.34	0.34	0.34	0.34	0.00
Sat Flow, veh/h	1774	3421	180	651	3539	1583	958	580	1583	851	732	1583
Grp Volume(v), veh/h	90	413	428	15	901	266	12	0	4	39	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1831	651	1770	1583	1538	0	1583	1583	0	1583
Q Serve(g_s), s	2.7	8.4	8.4	0.9	12.6	7.5	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	8.4	8.4	0.9	12.6	7.5	0.2	0.0	0.1	0.8	0.0	0.0
Prop In Lane	1.00		0.10	1.00		1.00	0.67		1.00	0.59		1.00
Lane Grp Cap(c), veh/h	161	885	916	344	1158	518	626	0	533	636	0	533
V/C Ratio(X)	0.56	0.47	0.47	0.04	0.78	0.51	0.02	0.00	0.01	0.06	0.00	0.00
Avail Cap(c_a), veh/h	161	885	916	344	1158	518	626	0	533	636	0	533
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.9	9.0	9.0	12.7	16.7	15.0	12.2	0.0	12.1	12.4	0.0	0.0
Incr Delay (d2), s/veh	13.2	1.8	1.7	0.2	5.2	3.6	0.1	0.0	0.0	0.2	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.5	4.6	0.2	7.0	3.8	0.1	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	37.2	10.7	10.7	13.0	21.9	18.6	12.2	0.0	12.2	12.6	0.0	0.0
LnGrp LOS	D	B	B	B	C	B	B		B	B		
Approach Vol, veh/h		931			1182			16			39	
Approach Delay, s/veh		13.3			21.0			12.2			12.6	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		23.0		32.0		23.0	9.5	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.5		27.5		18.5	5.0	18.0				
Max Q Clear Time (g_c+I1), s		2.2		10.4		2.8	4.7	14.6				
Green Ext Time (p_c), s		0.2		11.7		0.2	0.0	2.9				
Intersection Summary												
HCM 2010 Ctrl Delay				17.5								
HCM 2010 LOS				B								

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 7.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	77	131	778	0	0	1713
Future Vol, veh/h	77	131	778	0	0	1713
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	-	-	-	-
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	84	142	846	0	0	1862

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1777	423	0
Stage 1	846	-	-
Stage 2	931	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 74	579	0
Stage 1	381	-	0
Stage 2	344	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 74	579	-
Mov Cap-2 Maneuver	~ 74	-	-
Stage 1	381	-	-
Stage 2	344	-	-

Approach	WB	NB	SB
HCM Control Delay, s	98.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 74	579	-
HCM Lane V/C Ratio	- 1.131	0.246	-
HCM Control Delay (s)	- 243.2	13.2	-
HCM Lane LOS	- F	B	-
HCM 95th %tile Q(veh)	- 6.2	1	-

















Notes

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

HCM 2010 Signalized Intersection Summary

4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	81	120	235	24	707	0	1	1345	60
Future Volume (veh/h)	0	0	0	81	120	235	24	707	0	1	1345	60
Number				3	8	18	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	1863	1863	0	1900	1863	1900
Adj Flow Rate, veh/h				88	130	255	26	768	0	1	1462	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	2	2	2
Cap, veh/h				177	261	380	118	2265	0	48	1783	0
Arrive On Green				0.24	0.24	0.24	0.07	0.64	0.00	0.51	0.51	0.00
Sat Flow, veh/h				737	1089	1583	1774	3632	0	0	3557	0
Grp Volume(v), veh/h				218	0	255	26	768	0	785	678	0
Grp Sat Flow(s),veh/h/ln				1826	0	1583	1774	1770	0	1862	1610	0
Q Serve(g_s), s				7.7	0.0	10.9	1.0	7.5	0.0	0.0	26.6	0.0
Cycle Q Clear(g_c), s				7.7	0.0	10.9	1.0	7.5	0.0	26.6	26.6	0.0
Prop In Lane				0.40		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				438	0	380	118	2265	0	1004	827	0
V/C Ratio(X)				0.50	0.00	0.67	0.22	0.34	0.00	0.78	0.82	0.00
Avail Cap(c_a), veh/h				438	0	380	118	2265	0	1004	827	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				24.6	0.0	25.8	33.2	6.2	0.0	15.3	15.3	0.0
Incr Delay (d2), s/veh				4.0	0.0	9.1	4.2	0.4	0.0	6.0	9.0	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(50%),veh/ln				4.4	0.0	5.7	0.7	3.8	0.0	15.2	13.7	0.0
LnGrp Delay(d),s/veh				28.6	0.0	34.9	37.4	6.6	0.0	21.4	24.3	0.0
LnGrp LOS				C		C	D	A		C	C	
Approach Vol, veh/h					473			794			1463	
Approach Delay, s/veh					32.0			7.6			22.7	
Approach LOS					C			A			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		52.5			9.5	43.0		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		48.0			5.0	38.5		18.0				
Max Q Clear Time (g_c+I1), s		9.5			3.0	28.6		12.9				
Green Ext Time (p_c), s		24.2			0.0	8.4		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				19.9								
HCM 2010 LOS				B								

Intersection

Intersection Delay, s/veh 189.1
 Intersection LOS F

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	369	634	0	51	460	0	661	113
Future Vol, veh/h	0	369	634	0	51	460	0	661	113
Peak Hour Factor	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
Mvmt Flow	0	401	689	0	55	500	0	718	123
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	46.1	112.9	424.6
HCM LOS	E	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	95%	0%
Vol Thru, %	100%	0%	0%	0%	0%	5%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	460	185	185	634	699	75
LT Vol	0	0	185	185	0	661	0
Through Vol	51	0	0	0	0	38	75
RT Vol	0	460	0	0	634	0	0
Lane Flow Rate	55	500	201	201	689	759	82
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.138	1.145	0.453	0.453	0.994	1.972	0.202
Departure Headway (Hd)	10.629	9.891	9.511	9.511	6.42	9.764	9.273
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	339	370	381	381	572	380	390
Service Time	8.329	7.591	7.211	7.211	4.12	7.464	6.973
HCM Lane V/C Ratio	0.162	1.351	0.528	0.528	1.205	1.997	0.21
HCM Control Delay	15	123.7	19.9	19.9	61.4	468.8	14.3
HCM Lane LOS	B	F	C	C	F	F	B
HCM 95th-tile Q	0.5	16.2	2.3	2.3	14.2	50.2	0.7

HCM 2010 Signalized Intersection Summary
 12: Figueroa St & I-110 NB Ramps

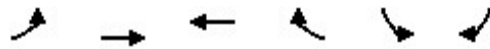
08/17/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	TTT		TT	↑↑	↑↑	T		
Traffic Volume (veh/h)	433	239	627	453	766	656		
Future Volume (veh/h)	433	239	627	453	766	656		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	366	373	682	492	833	713		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	532	484	757	2053	1062	475		
Arrive On Green	0.30	0.30	0.22	0.58	0.30	0.30		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	366	373	682	492	833	713		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	13.6	15.8	14.5	5.1	16.2	22.5		
Cycle Q Clear(g_c), s	13.6	15.8	14.5	5.1	16.2	22.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	532	484	757	2053	1062	475		
V/C Ratio(X)	0.69	0.77	0.90	0.24	0.78	1.50		
Avail Cap(c_a), veh/h	532	484	757	2053	1062	475		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.2	23.9	28.5	7.7	24.0	26.2		
Incr Delay (d2), s/veh	7.1	11.2	15.9	0.3	5.8	236.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.7	14.6	8.5	2.5	8.7	40.9		
LnGrp Delay(d),s/veh	30.2	35.1	44.4	8.0	29.9	262.6		
LnGrp LOS	C	D	D	A	C	F		
Approach Vol, veh/h	739			1174	1546			
Approach Delay, s/veh	32.7			29.1	137.2			
Approach LOS	C			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		48.0		27.0	21.0	27.0		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		43.5		22.5	16.5	22.5		
Max Q Clear Time (g_c+I1), s		7.1		17.8	16.5	24.5		
Green Ext Time (p_c), s		17.6		1.3	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			78.2					
HCM 2010 LOS			E					
Notes								

HCM 2010 Signalized Intersection Summary
 17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑	↗	↖↗	↗		
Traffic Volume (veh/h)	0	867	508	397	563	239		
Future Volume (veh/h)	0	867	508	397	563	239		
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	1863	1863	1863		
Adj Flow Rate, veh/h	0	942	552	0	612	0		
Adj No. of Lanes	0	3	2	1	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	2	2	2	2	2		
Cap, veh/h	0	1716	1194	534	1874	862		
Arrive On Green	0.00	0.34	0.34	0.00	0.54	0.00		
Sat Flow, veh/h	0	5421	3632	1583	3442	1583		
Grp Volume(v), veh/h	0	942	552	0	612	0		
Grp Sat Flow(s),veh/h/ln	0	1695	1770	1583	1721	1583		
Q Serve(g_s), s	0.0	11.5	9.3	0.0	7.5	0.0		
Cycle Q Clear(g_c), s	0.0	11.5	9.3	0.0	7.5	0.0		
Prop In Lane	0.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	1716	1194	534	1874	862		
V/C Ratio(X)	0.00	0.55	0.46	0.00	0.33	0.00		
Avail Cap(c_a), veh/h	0	2636	1834	821	1874	862		
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	20.5	19.8	0.0	9.6	0.0		
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.0	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	5.4	4.6	0.0	3.7	0.0		
LnGrp Delay(d),s/veh	0.0	20.8	20.1	0.0	10.1	0.0		
LnGrp LOS		C	C		B			
Approach Vol, veh/h		942	552		612			
Approach Delay, s/veh		20.8	20.1		10.1			
Approach LOS		C	C		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.2		46.0		30.2
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				39.5		41.5		39.5
Max Q Clear Time (g_c+I1), s				13.5		9.5		11.3
Green Ext Time (p_c), s				12.2		2.4		12.7
Intersection Summary								
HCM 2010 Ctrl Delay				17.5				
HCM 2010 LOS				B				

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖			↖↖↖	↖
Traffic Volume (veh/h)	0	0	0	382	0	444	587	960	0	0	1256	506
Future Volume (veh/h)	0	0	0	382	0	444	587	960	0	0	1256	506
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				415	0	0	638	1043	0	0	1365	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				983	0	438	715	2069	0	0	1565	487
Arrive On Green				0.28	0.00	0.00	0.21	0.58	0.00	0.00	0.31	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				415	0	0	638	1043	0	0	1365	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				6.2	0.0	0.0	11.7	11.3	0.0	0.0	16.5	0.0
Cycle Q Clear(g_c), s				6.2	0.0	0.0	11.7	11.3	0.0	0.0	16.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				983	0	438	715	2069	0	0	1565	487
V/C Ratio(X)				0.42	0.00	0.00	0.89	0.50	0.00	0.00	0.87	0.00
Avail Cap(c_a), veh/h				983	0	438	715	2069	0	0	1565	487
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				19.2	0.0	0.0	25.0	8.0	0.0	0.0	21.3	0.0
Incr Delay (d2), s/veh				1.3	0.0	0.0	15.8	0.9	0.0	0.0	7.0	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(50%),veh/ln				3.2	0.0	0.0	7.1	5.6	0.0	0.0	8.7	0.0
LnGrp Delay(d),s/veh				20.6	0.0	0.0	40.8	8.8	0.0	0.0	28.3	0.0
LnGrp LOS				C			D	A			C	
Approach Vol, veh/h					415			1681			1365	
Approach Delay, s/veh					20.6			21.0			28.3	
Approach LOS					C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		42.5			18.0	24.5		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		38.0			13.5	20.0		18.0				
Max Q Clear Time (g_c+I1), s		13.3			13.7	18.5		8.2				
Green Ext Time (p_c), s		19.1			0.0	1.4		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				23.8								
HCM 2010 LOS				C								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1100	786	106	1056	21	31	0	55	0	0	7
Future Volume (veh/h)	15	1100	786	106	1056	21	31	0	55	0	0	7
Number	7	4	14	3	8	18	5	2	12			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	16	1196	854	115	1148	23	34	0	60			
Adj No. of Lanes	1	1	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	367	1177	1278	124	3812	76	311	0	278			
Arrive On Green	0.63	0.63	0.63	0.14	1.00	1.00	0.18	0.00	0.18			
Sat Flow, veh/h	477	1863	1583	1774	5132	103	1774	0	1583			
Grp Volume(v), veh/h	16	1196	854	115	758	413	34	0	60			
Grp Sat Flow(s),veh/h/ln	477	1863	1583	1774	1695	1845	1774	0	1583			
Q Serve(g_s), s	1.4	69.5	24.8	7.0	0.0	0.0	1.8	0.0	3.6			
Cycle Q Clear(g_c), s	1.4	69.5	24.8	7.0	0.0	0.0	1.8	0.0	3.6			
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00			
Lane Grp Cap(c), veh/h	367	1177	1278	124	2518	1370	311	0	278			
V/C Ratio(X)	0.04	1.02	0.67	0.93	0.30	0.30	0.11	0.00	0.22			
Avail Cap(c_a), veh/h	367	1177	1278	124	2518	1370	311	0	278			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.7	20.3	4.4	47.0	0.0	0.0	38.1	0.0	38.9			
Incr Delay (d2), s/veh	0.2	30.3	2.8	62.8	0.3	0.6	0.7	0.0	1.8			
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(50%),veh/ln	0.2	45.2	21.4	5.6	0.1	0.2	0.9	0.0	1.7			
LnGrp Delay(d),s/veh	7.9	50.6	7.2	109.9	0.3	0.6	38.8	0.0	40.6			
LnGrp LOS	A	F	A	F	A	A	D		D			
Approach Vol, veh/h		2066			1286			94				
Approach Delay, s/veh		32.3			10.2			40.0				
Approach LOS		C			B			D				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		23.8	12.2	74.0				86.2				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.3	7.7	69.5				81.7				
Max Q Clear Time (g_c+I1), s		5.6	9.0	71.5				2.0				
Green Ext Time (p_c), s		0.2	0.0	0.0				59.9				
Intersection Summary												
HCM 2010 Ctrl Delay			24.3									
HCM 2010 LOS			C									

HCM 2010 Signalized Intersection Summary
 27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	1011	35	23	754	379	35	20	20	38	8	398
Future Volume (veh/h)	118	1011	35	23	754	379	35	20	20	38	8	398
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	128	1099	38	25	820	412	38	22	22	41	9	0
Adj No. of Lanes	1	2	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	1777	61	292	1158	518	408	214	518	476	93	518
Arrive On Green	0.13	0.68	0.68	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1774	3490	121	493	3539	1583	921	653	1583	1090	285	1583
Grp Volume(v), veh/h	128	557	580	25	820	412	60	0	22	50	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1841	493	1770	1583	1574	0	1583	1374	0	1583
Q Serve(g_s), s	3.8	9.6	9.6	2.0	11.2	13.0	0.0	0.0	0.5	0.8	0.0	0.0
Cycle Q Clear(g_c), s	3.8	9.6	9.6	2.0	11.2	13.0	1.2	0.0	0.5	2.0	0.0	0.0
Prop In Lane	1.00		0.07	1.00		1.00	0.63		1.00	0.82		1.00
Lane Grp Cap(c), veh/h	177	901	937	292	1158	518	622	0	518	569	0	518
V/C Ratio(X)	0.72	0.62	0.62	0.09	0.71	0.80	0.10	0.00	0.04	0.09	0.00	0.00
Avail Cap(c_a), veh/h	177	901	937	292	1158	518	622	0	518	569	0	518
HCM Platoon Ratio	1.33	1.33	1.33	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.1	5.9	5.9	13.1	16.2	16.8	12.9	0.0	12.6	13.1	0.0	0.0
Incr Delay (d2), s/veh	22.3	3.2	3.1	0.6	3.7	11.9	0.3	0.0	0.2	0.3	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	5.2	5.4	0.3	5.9	7.3	0.7	0.0	0.2	0.6	0.0	0.0
LnGrp Delay(d),s/veh	45.4	9.1	9.0	13.7	19.9	28.8	13.2	0.0	12.8	13.5	0.0	0.0
LnGrp LOS	D	A	A	B	B	C	B		B	B		
Approach Vol, veh/h		1265			1257			82			50	
Approach Delay, s/veh		12.7			22.7			13.1			13.5	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5		32.5		22.5	10.0	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0		28.0		18.0	5.5	18.0				
Max Q Clear Time (g_c+1), s		3.2		11.6		4.0	5.8	15.0				
Green Ext Time (p_c), s		0.5		12.7		0.5	0.0	2.7				
Intersection Summary												
HCM 2010 Ctrl Delay				17.4								
HCM 2010 LOS				B								

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	710	32	795	890
v/c Ratio	0.60	0.20	0.44	0.75
Control Delay	15.2	26.4	9.5	20.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.2	26.4	9.5	20.6
Queue Length 50th (ft)	81	10	78	128
Queue Length 95th (ft)	129	31	115	188
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1181	160	1801	1187
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	0.60	0.20	0.44	0.75

Intersection Summary

Queues

12: Figueroa St & I-110 NB Ramps

08/17/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1038	710	748	532	488
v/c Ratio	0.84	0.90	0.39	0.59	0.64
Control Delay	27.9	45.8	11.3	29.2	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.9	45.8	11.3	29.2	6.8
Queue Length 50th (ft)	209	177	105	122	0
Queue Length 95th (ft)	#295	#276	143	173	75
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1241	793	1924	906	768
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	0.84	0.90	0.39	0.59	0.64

Intersection Summary

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

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	484	367	304	999	164
v/c Ratio	0.55	0.60	0.19	0.41	0.10
Control Delay	31.3	33.5	0.3	5.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	33.5	0.3	5.5	0.1
Queue Length 50th (ft)	78	85	0	82	0
Queue Length 95th (ft)	109	127	0	139	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	1753	1220	1583	2434	1583
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	0.28	0.30	0.19	0.41	0.10

Intersection Summary

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	141	144	617	466	1298	933	241
v/c Ratio	0.28	0.29	0.39	0.78	0.67	0.61	0.37
Control Delay	17.9	18.0	0.7	30.7	14.2	20.1	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	17.9	18.0	0.7	30.7	14.4	20.1	4.6
Queue Length 50th (ft)	41	42	0	92	192	104	0
Queue Length 95th (ft)	82	83	0	m#118	m258	142	43
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	505	1583	600	1946	1525	643
Starvation Cap Reductn	0	0	0	0	136	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.29	0.39	0.78	0.72	0.61	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	703	663	117	1231	103	235	11
v/c Ratio	0.05	0.87	0.52	0.71	0.41	0.21	0.39	0.07
Control Delay	12.4	31.7	3.4	56.9	8.1	20.8	5.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	31.7	3.4	56.9	8.1	20.8	5.2	0.0
Queue Length 50th (ft)	2	263	42	50	92	34	0	0
Queue Length 95th (ft)	10	#466	78	#127	119	70	47	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45			50			660	
Base Capacity (vph)	174	811	1278	164	3008	493	610	164
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.87	0.52	0.71	0.41	0.21	0.39	0.07

Intersection Summary

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

Queues

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	90	841	15	901	266	12	4	39	459
v/c Ratio	0.56	0.48	0.07	0.78	0.38	0.02	0.01	0.07	0.65
Control Delay	40.1	10.0	14.0	22.7	4.1	12.5	0.0	12.9	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	10.0	14.0	22.7	4.1	12.5	0.0	12.9	11.8
Queue Length 50th (ft)	29	85	3	137	0	3	0	8	49
Queue Length 95th (ft)	#81	124	14	#201	41	11	0	25	133
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	160	1764	204	1158	697	563	611	555	703
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.48	0.07	0.78	0.38	0.02	0.01	0.07	0.65

Intersection Summary

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

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	473	26	768	1528
v/c Ratio	0.50	0.22	0.34	0.88
Control Delay	14.5	37.9	6.7	24.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.5	37.9	6.7	24.1
Queue Length 50th (ft)	49	12	75	310
Queue Length 95th (ft)	92	35	103	#446
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	946	118	2264	1729
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	0.50	0.22	0.34	0.88

Intersection Summary

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

Queues

12: Figueroa St & I-110 NB Ramps

08/17/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	731	682	492	833	713
v/c Ratio	0.66	0.90	0.24	0.79	0.78
Control Delay	21.4	46.2	8.1	30.4	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	46.2	8.1	30.4	10.5
Queue Length 50th (ft)	119	159	53	185	26
Queue Length 95th (ft)	177	#256	77	252	152
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1101	755	2052	1061	920
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.90	0.24	0.79	0.78

Intersection Summary

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

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	942	552	432	612	260
v/c Ratio	0.62	0.52	0.27	0.31	0.16
Control Delay	23.5	22.7	0.4	9.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	22.7	0.4	9.1	0.2
Queue Length 50th (ft)	131	106	0	65	0
Queue Length 95th (ft)	169	150	0	117	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2788	1940	1583	1977	1583
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	0.34	0.28	0.27	0.31	0.16

Intersection Summary

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	207	208	483	638	1043	1365	550
v/c Ratio	0.45	0.45	0.31	0.89	0.50	0.87	0.63
Control Delay	23.1	23.1	0.5	43.1	9.0	29.2	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	23.1	23.1	0.5	43.1	9.3	29.2	5.7
Queue Length 50th (ft)	70	71	0	127	113	185	0
Queue Length 95th (ft)	130	131	0	#216	156	#264	63
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	465	465	1583	713	2068	1564	867
Starvation Cap Reductn	0	0	0	0	426	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.45	0.31	0.89	0.64	0.87	0.63

Intersection Summary

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

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	16	1196	854	115	1171	34	60	8
v/c Ratio	0.06	1.02	0.63	0.93	0.31	0.11	0.18	0.08
Control Delay	8.5	51.8	4.6	110.8	5.3	39.3	11.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	8.5	51.8	4.6	110.8	5.5	39.3	11.5	0.0
Queue Length 50th (ft)	4	-838	108	86	76	20	0	0
Queue Length 95th (ft)	13	#1150	172	m#167	118	49	37	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45			50			660	
Base Capacity (vph)	269	1177	1361	123	3767	310	327	104
Starvation Cap Reductn	0	0	0	0	1628	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	1.02	0.63	0.93	0.55	0.11	0.18	0.08

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Queues

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	128	1137	25	820	412	60	22	50	433
v/c Ratio	0.72	0.63	0.16	0.71	0.52	0.12	0.04	0.10	0.61
Control Delay	33.8	16.1	16.5	20.2	4.5	13.8	0.1	13.7	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	16.1	16.5	20.2	4.5	13.8	0.1	13.7	9.8
Queue Length 50th (ft)	45	269	6	121	0	14	0	11	35
Queue Length 95th (ft)	m47	m258	22	176	50	35	0	31	109
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	177	1797	152	1158	795	513	598	487	709
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.63	0.16	0.71	0.52	0.12	0.04	0.10	0.61

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

FUTURE BASE

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 40.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	203	301	929	0	0	714
Future Vol, veh/h	203	301	929	0	0	714
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	-	-	-	-
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	221	327	1010	0	0	776

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1398	505	0
Stage 1	1010	-	-
Stage 2	388	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 132	512	0
Stage 1	313	-	0
Stage 2	655	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 132	512	-
Mov Cap-2 Maneuver	~ 132	-	-
Stage 1	313	-	-
Stage 2	655	-	-

Approach	WB	NB	SB
HCM Control Delay, s	171.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 132 512	-
HCM Lane V/C Ratio	- 1.672 0.639	-
HCM Control Delay (s)	-\$ 391.6 23.6	-
HCM Lane LOS	- F C	-
HCM 95th %tile Q(veh)	- 16.2 4.5	-

















Notes

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

HCM 2010 Signalized Intersection Summary

4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	80	388	197	30	680	0	0	670	86
Future Volume (veh/h)	0	0	0	80	388	197	30	680	0	0	670	86
Number				3	8	18	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	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				87	422	214	33	739	0	0	728	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				133	660	357	165	1802	0	0	1184	0
Arrive On Green				0.33	0.33	0.33	0.09	0.51	0.00	0.00	0.33	0.00
Sat Flow, veh/h				406	2017	1090	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				395	0	328	33	739	0	0	728	0
Grp Sat Flow(s),veh/h/ln				1842	0	1670	1774	1770	0	0	1770	0
Q Serve(g_s), s				10.1	0.0	9.0	0.9	7.1	0.0	0.0	9.5	0.0
Cycle Q Clear(g_c), s				10.1	0.0	9.0	0.9	7.1	0.0	0.0	9.5	0.0
Prop In Lane				0.22		0.65	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				603	0	547	165	1802	0	0	1184	0
V/C Ratio(X)				0.66	0.00	0.60	0.20	0.41	0.00	0.00	0.61	0.00
Avail Cap(c_a), veh/h				603	0	547	165	1802	0	0	1184	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	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.8	0.0	15.5	23.1	8.4	0.0	0.0	15.3	0.0
Incr Delay (d2), s/veh				5.5	0.0	4.8	2.7	0.7	0.0	0.0	2.4	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(50%),veh/ln				6.0	0.0	4.8	0.6	3.6	0.0	0.0	4.9	0.0
LnGrp Delay(d),s/veh				21.3	0.0	20.3	25.8	9.1	0.0	0.0	17.7	0.0
LnGrp LOS				C		C	C	A			B	
Approach Vol, veh/h					723			772			728	
Approach Delay, s/veh					20.9			9.8			17.7	
Approach LOS					C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		32.5			9.6	22.9		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		28.0			5.1	18.4		18.0				
Max Q Clear Time (g_c+I1), s		9.1			2.9	11.5		12.1				
Green Ext Time (p_c), s		10.1			0.0	4.8		2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				16.0								
HCM 2010 LOS				B								

Intersection

Intersection Delay, s/veh 56.3

Intersection LOS F

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	891	383	0	96	125	0	332	99
Future Vol, veh/h	0	891	383	0	96	125	0	332	99
Peak Hour Factor	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
Mvmt Flow	0	968	416	0	104	136	0	361	108
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	60.3	16.1	64.9
HCM LOS	F	C	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	91%	0%
Vol Thru, %	100%	0%	0%	0%	0%	9%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	125	446	446	383	365	66
LT Vol	0	0	446	446	0	332	0
Through Vol	96	0	0	0	0	33	66
RT Vol	0	125	0	0	383	0	0
Lane Flow Rate	104	136	484	484	416	397	72
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.274	0.33	1.041	1.041	0.549	0.992	0.17
Departure Headway (Hd)	9.761	9.037	7.738	7.738	4.748	9.221	8.756
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	370	401	475	475	766	397	412
Service Time	7.461	6.737	5.438	5.438	2.448	6.921	6.456
HCM Lane V/C Ratio	0.281	0.339	1.019	1.019	0.543	1	0.175
HCM Control Delay	16.1	16.1	80.6	80.6	13.1	74.3	13.2
HCM Lane LOS	C	C	F	F	B	F	B
HCM 95th-tile Q	1.1	1.4	14.7	14.7	3.4	11.9	0.6

HCM 2010 Signalized Intersection Summary
 12: Figueroa St & I-110 NB Ramps

08/15/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	TT		TT	↑↑	↑↑	T		
Traffic Volume (veh/h)	589	319	677	713	495	179		
Future Volume (veh/h)	589	319	677	713	495	179		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	494	504	736	775	538	195		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	494	450	789	2064	1007	451		
Arrive On Green	0.28	0.28	0.23	0.58	0.28	0.28		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	494	504	736	775	538	195		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	18.1	18.1	13.6	7.6	8.3	6.5		
Cycle Q Clear(g_c), s	18.1	18.1	13.6	7.6	8.3	6.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	494	450	789	2064	1007	451		
V/C Ratio(X)	1.00	1.12	0.93	0.38	0.53	0.43		
Avail Cap(c_a), veh/h	494	450	789	2064	1007	451		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.4	23.5	24.6	7.2	19.6	19.0		
Incr Delay (d2), s/veh	40.5	79.7	19.3	0.5	2.0	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.3	23.8	8.6	3.8	4.3	3.2		
LnGrp Delay(d),s/veh	63.9	103.1	43.9	7.8	21.6	22.0		
LnGrp LOS	E	F	D	A	C	C		
Approach Vol, veh/h	998			1511	733			
Approach Delay, s/veh	83.7			25.4	21.7			
Approach LOS	F			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.4		22.6	19.4	23.0		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		37.9		18.1	14.9	18.5		
Max Q Clear Time (g_c+I1), s		9.6		20.1	15.6	10.3		
Green Ext Time (p_c), s		11.9		0.0	0.0	5.4		
Intersection Summary								
HCM 2010 Ctrl Delay			42.5					
HCM 2010 LOS			D					
Notes								

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	473	3	478	0	0	0	0	1083	125	0	715	262
Future Volume (veh/h)	473	3	478	0	0	0	0	1083	125	0	715	262
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	0	1863	1863
Adj Flow Rate, veh/h	514	3	0				0	1177	136	0	777	285
Adj No. of Lanes	2	2	1				0	2	0	0	2	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	1273	1310	586				0	1439	166	0	1593	712
Arrive On Green	0.37	0.37	0.00				0.00	0.45	0.45	0.00	0.45	0.45
Sat Flow, veh/h	3442	3539	1583				0	3292	369	0	3632	1583
Grp Volume(v), veh/h	514	3	0				0	650	663	0	777	285
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1798	0	1770	1583
Q Serve(g_s), s	5.5	0.0	0.0				0.0	16.0	16.1	0.0	7.7	6.0
Cycle Q Clear(g_c), s	5.5	0.0	0.0				0.0	16.0	16.1	0.0	7.7	6.0
Prop In Lane	1.00		1.00				0.00		0.21	0.00		1.00
Lane Grp Cap(c), veh/h	1273	1310	586				0	796	809	0	1593	712
V/C Ratio(X)	0.40	0.00	0.00				0.00	0.82	0.82	0.00	0.49	0.40
Avail Cap(c_a), veh/h	1273	1310	586				0	796	809	0	1593	712
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	0.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.7	9.9	0.0				0.0	12.0	12.0	0.0	9.7	9.2
Incr Delay (d2), s/veh	1.0	0.0	0.0				0.0	9.0	9.1	0.0	1.1	1.7
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(50%),veh/ln	2.7	0.0	0.0				0.0	9.6	9.8	0.0	3.9	6.4
LnGrp Delay(d),s/veh	12.6	9.9	0.0				0.0	21.0	21.1	0.0	10.8	10.9
LnGrp LOS	B	A						C	C		B	B
Approach Vol, veh/h		517						1313			1062	
Approach Delay, s/veh		12.6						21.0			10.8	
Approach LOS		B						C			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		27.0		23.0		27.0						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		22.5		18.5		22.5						
Max Q Clear Time (g_c+I1), s		18.1		7.5		9.7						
Green Ext Time (p_c), s		4.0		1.5		10.5						
Intersection Summary												
HCM 2010 Ctrl Delay			15.8									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖			↖↖↖	↖
Traffic Volume (veh/h)	0	0	0	93	2	560	350	1247	0	0	842	229
Future Volume (veh/h)	0	0	0	93	2	560	350	1247	0	0	842	229
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				102	0	0	380	1355	0	0	915	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1064	0	475	602	1947	0	0	1526	475
Arrive On Green				0.30	0.00	0.00	0.17	0.55	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				102	0	0	380	1355	0	0	915	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				1.2	0.0	0.0	6.1	16.7	0.0	0.0	9.2	0.0
Cycle Q Clear(g_c), s				1.2	0.0	0.0	6.1	16.7	0.0	0.0	9.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	475	602	1947	0	0	1526	475
V/C Ratio(X)				0.10	0.00	0.00	0.63	0.70	0.00	0.00	0.60	0.00
Avail Cap(c_a), veh/h				1064	0	475	602	1947	0	0	1526	475
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.1	0.0	0.0	23.0	9.8	0.0	0.0	17.9	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	5.0	2.1	0.0	0.0	1.8	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(50%),veh/ln				0.6	0.0	0.0	3.3	8.7	0.0	0.0	4.5	0.0
LnGrp Delay(d),s/veh				15.3	0.0	0.0	27.9	11.9	0.0	0.0	19.7	0.0
LnGrp LOS				B			C	B			B	
Approach Vol, veh/h					102			1735			915	
Approach Delay, s/veh					15.3			15.4			19.7	
Approach LOS					B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.5			15.0	22.5		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		33.0			10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s		18.7			8.1	11.2		3.2				
Green Ext Time (p_c), s		11.8			0.4	6.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				16.8								
HCM 2010 LOS				B								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	631	653	111	1089	20	103	0	227	0	0	10
Future Volume (veh/h)	7	631	653	111	1089	20	103	0	227	0	0	10
Number	7	4	14	3	8	18	5	2	12			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	8	686	710	121	1184	22	112	0	247			
Adj No. of Lanes	1	2	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	270	1150	515	222	2699	50	577	0	515			
Arrive On Green	0.32	0.32	0.32	0.13	0.52	0.52	0.32	0.00	0.32			
Sat Flow, veh/h	462	3539	1583	1774	5141	96	1774	0	1583			
Grp Volume(v), veh/h	8	686	710	121	781	425	112	0	247			
Grp Sat Flow(s),veh/h/ln	462	1770	1583	1774	1695	1846	1774	0	1583			
Q Serve(g_s), s	0.7	9.7	19.5	3.8	8.5	8.5	2.7	0.0	7.5			
Cycle Q Clear(g_c), s	0.7	9.7	19.5	3.8	8.5	8.5	2.7	0.0	7.5			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	270	1150	515	222	1780	969	577	0	515			
V/C Ratio(X)	0.03	0.60	1.38	0.55	0.44	0.44	0.19	0.00	0.48			
Avail Cap(c_a), veh/h	270	1150	515	222	1780	969	577	0	515			
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	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	13.9	17.0	20.3	24.7	8.8	8.8	14.6	0.0	16.2			
Incr Delay (d2), s/veh	0.2	2.3	182.8	9.3	0.8	1.4	0.8	0.0	3.2			
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(50%),veh/ln	0.1	5.0	34.6	2.5	4.1	4.6	1.5	0.0	3.7			
LnGrp Delay(d),s/veh	14.1	19.2	203.0	34.0	9.6	10.2	15.3	0.0	19.4			
LnGrp LOS	B	B	F	C	A	B	B		B			
Approach Vol, veh/h		1404			1327			359				
Approach Delay, s/veh		112.1			12.0			18.1				
Approach LOS		F			B			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		24.0	12.0	24.0				36.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.5	7.5	19.5				31.5				
Max Q Clear Time (g_c+1), s		9.5	5.8	21.5				10.5				
Green Ext Time (p_c), s		0.9	0.0	0.0				16.1				
Intersection Summary												
HCM 2010 Ctrl Delay			58.2									
HCM 2010 LOS			E									

HCM 2010 Signalized Intersection Summary
 27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗ ↘	↖ ↗ ↘		↖ ↗	↖ ↗	↖		↖	↖		↖	↖
Traffic Volume (veh/h)	102	710	40	14	788	256	7	4	4	22	15	443
Future Volume (veh/h)	102	710	40	14	788	256	7	4	4	22	15	443
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	111	772	43	15	857	278	8	4	4	24	16	0
Adj No. of Lanes	1	3	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	2510	139	349	1158	518	422	190	518	388	234	518
Arrive On Green	0.10	0.51	0.51	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1774	4931	274	667	3539	1583	957	582	1583	864	714	1583
Grp Volume(v), veh/h	111	530	285	15	857	278	12	0	4	40	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1814	667	1770	1583	1539	0	1583	1578	0	1583
Q Serve(g_s), s	3.3	5.0	5.0	0.9	11.8	7.9	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.3	5.0	5.0	0.9	11.8	7.9	0.2	0.0	0.1	0.8	0.0	0.0
Prop In Lane	1.00		0.15	1.00		1.00	0.67		1.00	0.60		1.00
Lane Grp Cap(c), veh/h	177	1726	924	349	1158	518	613	0	518	621	0	518
V/C Ratio(X)	0.63	0.31	0.31	0.04	0.74	0.54	0.02	0.00	0.01	0.06	0.00	0.00
Avail Cap(c_a), veh/h	177	1726	924	349	1158	518	613	0	518	621	0	518
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.8	7.9	7.9	12.7	16.4	15.1	12.5	0.0	12.5	12.7	0.0	0.0
Incr Delay (d2), s/veh	15.5	0.5	0.9	0.2	4.3	3.9	0.1	0.0	0.0	0.2	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.4	2.7	0.2	6.4	4.0	0.1	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	39.3	8.3	8.7	13.0	20.7	19.0	12.6	0.0	12.5	12.9	0.0	0.0
LnGrp LOS	D	A	A	B	C	B	B		B	B		
Approach Vol, veh/h		926			1150			16			40	
Approach Delay, s/veh		12.2			20.2			12.6			12.9	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5		32.5		22.5	10.0	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0		28.0		18.0	5.5	18.0				
Max Q Clear Time (g_c+I1), s		2.2		7.0		2.8	5.3	13.8				
Green Ext Time (p_c), s		0.2		13.1		0.2	0.0	3.5				
Intersection Summary												
HCM 2010 Ctrl Delay				16.5								
HCM 2010 LOS				B								

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	79	135	771	0	0	1728
Future Vol, veh/h	79	135	771	0	0	1728
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	-	-	-	-
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	86	147	838	0	0	1878

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1777	419	0
Stage 1	838	-	-
Stage 2	939	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 74	583	0
Stage 1	385	-	0
Stage 2	341	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 74	583	-
Mov Cap-2 Maneuver	~ 74	-	-
Stage 1	385	-	-
Stage 2	341	-	-

Approach	WB	NB	SB
HCM Control Delay, s	101.8	0	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	74 583	-
HCM Lane V/C Ratio	-	1.16 0.252	-
HCM Control Delay (s)	-	253.2 13.2	-
HCM Lane LOS	-	F B	-
HCM 95th %tile Q(veh)	-	6.5 1	-

Notes

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

HCM 2010 Signalized Intersection Summary
 4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	64	124	242	25	626	0	1	1267	62
Future Volume (veh/h)	0	0	0	64	124	242	25	626	0	1	1267	62
Number				3	8	18	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	1863	1863	0	1900	1863	1900
Adj Flow Rate, veh/h				70	135	263	27	680	0	1	1377	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	2	2	2
Cap, veh/h				161	310	407	127	2174	0	52	1662	0
Arrive On Green				0.26	0.26	0.26	0.07	0.61	0.00	0.48	0.48	0.00
Sat Flow, veh/h				625	1206	1583	1774	3632	0	0	3557	0
Grp Volume(v), veh/h				205	0	263	27	680	0	739	639	0
Grp Sat Flow(s),veh/h/ln				1831	0	1583	1774	1770	0	1862	1610	0
Q Serve(g_s), s				6.6	0.0	10.4	1.0	6.4	0.0	0.0	24.0	0.0
Cycle Q Clear(g_c), s				6.6	0.0	10.4	1.0	6.4	0.0	24.0	24.0	0.0
Prop In Lane				0.34		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				471	0	407	127	2174	0	943	771	0
V/C Ratio(X)				0.44	0.00	0.65	0.21	0.31	0.00	0.78	0.83	0.00
Avail Cap(c_a), veh/h				471	0	407	127	2174	0	943	771	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				21.7	0.0	23.2	30.6	6.4	0.0	15.8	15.8	0.0
Incr Delay (d2), s/veh				2.9	0.0	7.7	3.8	0.4	0.0	6.5	10.0	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(50%),veh/ln				3.7	0.0	5.4	0.6	3.2	0.0	13.8	12.6	0.0
LnGrp Delay(d),s/veh				24.7	0.0	30.9	34.5	6.8	0.0	22.3	25.8	0.0
LnGrp LOS				C		C	C	A		C	C	
Approach Vol, veh/h					468			707			1378	
Approach Delay, s/veh					28.1			7.9			23.9	
Approach LOS					C			A			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		47.5			9.5	38.0		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		43.0			5.0	33.5		18.0				
Max Q Clear Time (g_c+I1), s		8.4			3.0	26.0		12.4				
Green Ext Time (p_c), s		20.5			0.0	6.3		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay				20.2								
HCM 2010 LOS				C								

Intersection

Intersection Delay, s/veh 44.7

Intersection LOS F

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	384	176	0	53	423	0	613	116
Future Vol, veh/h	0	384	176	0	53	423	0	613	116
Peak Hour Factor	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
Mvmt Flow	0	417	191	0	58	460	0	666	126
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	16.9	54.5	301.7
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	94%	0%
Vol Thru, %	100%	0%	0%	0%	0%	6%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	423	192	192	176	652	77
LT Vol	0	0	192	192	0	613	0
Through Vol	53	0	0	0	0	39	77
RT Vol	0	423	0	0	176	0	0
Lane Flow Rate	58	460	209	209	191	708	84
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.129	0.942	0.471	0.471	0.276	1.677	0.188
Departure Headway (Hd)	9.253	8.524	9.066	9.066	6.01	8.521	8.038
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	390	428	401	401	603	432	445
Service Time	6.953	6.224	6.766	6.766	3.71	6.309	5.825
HCM Lane V/C Ratio	0.149	1.075	0.521	0.521	0.317	1.639	0.189
HCM Control Delay	13.3	59.7	19.6	19.6	11	336	12.7
HCM Lane LOS	B	F	C	C	B	F	B
HCM 95th-tile Q	0.4	10.8	2.4	2.4	1.1	41.7	0.7

HCM 2010 Signalized Intersection Summary

12: Figueroa St & I-110 NB Ramps

08/15/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	TT		TT	↑↑	↑↑	T		
Traffic Volume (veh/h)	370	195	648	476	768	239		
Future Volume (veh/h)	370	195	648	476	768	239		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	307	314	704	517	835	260		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	491	447	768	2069	1035	463		
Arrive On Green	0.28	0.28	0.22	0.58	0.29	0.29		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	307	314	704	517	835	260		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	9.8	11.3	13.0	4.6	14.2	9.0		
Cycle Q Clear(g_c), s	9.8	11.3	13.0	4.6	14.2	9.0		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	491	447	768	2069	1035	463		
V/C Ratio(X)	0.62	0.70	0.92	0.25	0.81	0.56		
Avail Cap(c_a), veh/h	491	447	768	2069	1035	463		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	20.5	21.1	24.7	6.6	21.3	19.5		
Incr Delay (d2), s/veh	5.9	8.9	17.6	0.3	6.8	4.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.6	10.8	8.0	2.3	7.8	4.5		
LnGrp Delay(d),s/veh	26.4	30.0	42.3	6.9	28.1	24.3		
LnGrp LOS	C	C	D	A	C	C		
Approach Vol, veh/h	621			1221	1095			
Approach Delay, s/veh	28.2			27.3	27.2			
Approach LOS	C			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		42.5		22.5	19.0	23.5		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		38.0		18.0	14.5	19.0		
Max Q Clear Time (g_c+I1), s		6.6		13.3	15.0	16.2		
Green Ext Time (p_c), s		13.2		1.0	0.0	2.2		
Intersection Summary								
HCM 2010 Ctrl Delay			27.4					
HCM 2010 LOS			C					
Notes								

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖↗	↑↑	↗					↑↑			↑↑	↗
Traffic Volume (veh/h)	177	132	292	0	0	0	0	1221	195	0	991	400
Future Volume (veh/h)	177	132	292	0	0	0	0	1221	195	0	991	400
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	0	1863	1863
Adj Flow Rate, veh/h	192	143	0				0	1327	212	0	1077	435
Adj No. of Lanes	2	2	1				0	2	0	0	2	1
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	1061	1091	488				0	1659	263	0	1917	858
Arrive On Green	0.31	0.31	0.00				0.00	0.54	0.54	0.00	0.54	0.54
Sat Flow, veh/h	3442	3539	1583				0	3155	485	0	3632	1583
Grp Volume(v), veh/h	192	143	0				0	762	777	0	1077	435
Grp Sat Flow(s),veh/h/ln	1721	1770	1583				0	1770	1777	0	1770	1583
Q Serve(g_s), s	2.5	1.7	0.0				0.0	20.8	21.4	0.0	12.0	10.4
Cycle Q Clear(g_c), s	2.5	1.7	0.0				0.0	20.8	21.4	0.0	12.0	10.4
Prop In Lane	1.00		1.00				0.00		0.27	0.00		1.00
Lane Grp Cap(c), veh/h	1061	1091	488				0	959	963	0	1917	858
V/C Ratio(X)	0.18	0.13	0.00				0.00	0.79	0.81	0.00	0.56	0.51
Avail Cap(c_a), veh/h	1061	1091	488				0	959	963	0	1917	858
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	0.00				0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	15.2	15.0	0.0				0.0	11.1	11.2	0.0	9.1	8.7
Incr Delay (d2), s/veh	0.4	0.2	0.0				0.0	6.8	7.2	0.0	1.2	2.1
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(50%),veh/ln	1.2	0.9	0.0				0.0	11.8	12.3	0.0	6.2	11.0
LnGrp Delay(d),s/veh	15.6	15.2	0.0				0.0	17.8	18.4	0.0	10.3	10.8
LnGrp LOS	B	B						B	B		B	B
Approach Vol, veh/h		335						1539			1512	
Approach Delay, s/veh		15.4						18.1			10.4	
Approach LOS		B						B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		37.0		23.0		37.0						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		32.5		18.5		32.5						
Max Q Clear Time (g_c+I1), s		23.4		4.5		14.0						
Green Ext Time (p_c), s		8.6		1.3		16.5						
Intersection Summary												
HCM 2010 Ctrl Delay			14.4									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖			↖↖↖	↖
Traffic Volume (veh/h)	0	0	0	94	0	410	400	988	0	0	1301	521
Future Volume (veh/h)	0	0	0	94	0	410	400	988	0	0	1301	521
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				102	0	0	435	1074	0	0	1414	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1064	0	475	493	1947	0	0	1687	525
Arrive On Green				0.30	0.00	0.00	0.14	0.55	0.00	0.00	0.33	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				102	0	0	435	1074	0	0	1414	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				1.2	0.0	0.0	7.4	11.8	0.0	0.0	15.4	0.0
Cycle Q Clear(g_c), s				1.2	0.0	0.0	7.4	11.8	0.0	0.0	15.4	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	475	493	1947	0	0	1687	525
V/C Ratio(X)				0.10	0.00	0.00	0.88	0.55	0.00	0.00	0.84	0.00
Avail Cap(c_a), veh/h				1064	0	475	493	1947	0	0	1687	525
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.1	0.0	0.0	25.2	8.7	0.0	0.0	18.6	0.0
Incr Delay (d2), s/veh				0.2	0.0	0.0	19.8	1.1	0.0	0.0	5.2	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(50%),veh/ln				0.6	0.0	0.0	4.9	6.0	0.0	0.0	8.0	0.0
LnGrp Delay(d),s/veh				15.3	0.0	0.0	45.0	9.9	0.0	0.0	23.7	0.0
LnGrp LOS				B			D	A			C	
Approach Vol, veh/h					102			1509			1414	
Approach Delay, s/veh					15.3			20.0			23.7	
Approach LOS					B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.5			13.1	24.4		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		33.0			8.6	19.9		18.0				
Max Q Clear Time (g_c+I1), s		13.8			9.4	17.4		3.2				
Green Ext Time (p_c), s		15.9			0.0	2.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				21.6								
HCM 2010 LOS				C								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary

26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1082	831	109	1038	22	52	0	59	0	0	7
Future Volume (veh/h)	15	1082	831	109	1038	22	52	0	59	0	0	7
Number	7	4	14	3	8	18	5	2	12			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	16	1176	903	118	1128	24	57	0	64			
Adj No. of Lanes	1	2	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	294	1268	567	163	2690	57	577	0	515			
Arrive On Green	0.36	0.36	0.36	0.18	1.00	1.00	0.32	0.00	0.32			
Sat Flow, veh/h	486	3539	1583	1774	5125	109	1774	0	1583			
Grp Volume(v), veh/h	16	1176	903	118	746	406	57	0	64			
Grp Sat Flow(s),veh/h/ln	486	1770	1583	1774	1695	1844	1774	0	1583			
Q Serve(g_s), s	1.3	19.2	21.5	3.8	0.0	0.0	1.3	0.0	1.7			
Cycle Q Clear(g_c), s	1.3	19.2	21.5	3.8	0.0	0.0	1.3	0.0	1.7			
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00			
Lane Grp Cap(c), veh/h	294	1268	567	163	1780	968	577	0	515			
V/C Ratio(X)	0.05	0.93	1.59	0.73	0.42	0.42	0.10	0.00	0.12			
Avail Cap(c_a), veh/h	294	1268	567	163	1780	968	577	0	515			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.8	18.5	19.3	23.8	0.0	0.0	14.1	0.0	14.2			
Incr Delay (d2), s/veh	0.4	13.0	274.5	24.4	0.7	1.3	0.3	0.0	0.5			
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(50%),veh/ln	0.2	11.6	52.6	2.9	0.2	0.4	0.7	0.0	0.8			
LnGrp Delay(d),s/veh	13.1	31.5	293.7	48.2	0.7	1.3	14.5	0.0	14.7			
LnGrp LOS	B	C	F	D	A	A	B		B			
Approach Vol, veh/h		2095			1270			121				
Approach Delay, s/veh		144.4			5.3			14.6				
Approach LOS		F			A			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		24.0	10.0	26.0				36.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		19.5	5.5	21.5				31.5				
Max Q Clear Time (g_c+I1), s		3.7	5.8	23.5				2.0				
Green Ext Time (p_c), s		0.3	0.0	0.0				25.2				
Intersection Summary												
HCM 2010 Ctrl Delay			89.2									
HCM 2010 LOS			F									

HCM 2010 Signalized Intersection Summary
 27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑		↔		↑	↔		↑	↔
Traffic Volume (veh/h)	136	978	36	24	697	393	36	21	21	39	8	440
Future Volume (veh/h)	136	978	36	24	697	393	36	21	21	39	8	440
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	148	1063	39	26	758	427	39	23	23	42	9	0
Adj No. of Lanes	1	3	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	2644	97	277	1091	488	397	213	515	463	89	515
Arrive On Green	0.28	1.00	1.00	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.32	0.00
Sat Flow, veh/h	1774	5036	185	510	3539	1583	922	656	1583	1088	274	1583
Grp Volume(v), veh/h	148	715	387	26	758	427	62	0	23	51	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1830	510	1770	1583	1578	0	1583	1362	0	1583
Q Serve(g_s), s	4.3	0.0	0.0	2.2	11.3	15.3	0.0	0.0	0.6	1.0	0.0	0.0
Cycle Q Clear(g_c), s	4.3	0.0	0.0	2.2	11.3	15.3	1.4	0.0	0.6	2.4	0.0	0.0
Prop In Lane	1.00		0.10	1.00		1.00	0.63		1.00	0.82		1.00
Lane Grp Cap(c), veh/h	251	1780	961	277	1091	488	611	0	515	552	0	515
V/C Ratio(X)	0.59	0.40	0.40	0.09	0.69	0.87	0.10	0.00	0.04	0.09	0.00	0.00
Avail Cap(c_a), veh/h	251	1780	961	277	1091	488	611	0	515	552	0	515
HCM Platoon Ratio	2.00	2.00	2.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.0	0.0	0.0	15.1	18.3	19.7	14.1	0.0	13.9	14.5	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.7	1.3	0.7	3.7	19.2	0.3	0.0	0.2	0.3	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	0.2	0.3	0.4	6.0	9.2	0.8	0.0	0.3	0.6	0.0	0.0
LnGrp Delay(d),s/veh	29.7	0.7	1.3	15.8	21.9	38.8	14.5	0.0	14.0	14.9	0.0	0.0
LnGrp LOS	C	A	A	B	C	D	B		B	B		
Approach Vol, veh/h		1250			1211			85			51	
Approach Delay, s/veh		4.3			27.8			14.4			14.9	
Approach LOS		A			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0	13.0	23.0				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5	8.5	18.5				
Max Q Clear Time (g_c+I1), s		3.4		2.0		4.4	6.3	17.3				
Green Ext Time (p_c), s		0.5		19.0		0.5	0.1	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				15.8								
HCM 2010 LOS				B								

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	723	33	739	821
v/c Ratio	0.61	0.20	0.41	0.70
Control Delay	15.3	26.3	9.2	19.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.3	26.3	9.2	19.1
Queue Length 50th (ft)	82	10	71	115
Queue Length 95th (ft)	131	32	105	170
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1184	164	1801	1181
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	0.61	0.20	0.41	0.70

Intersection Summary

Queues

12: Figueroa St & I-110 NB Ramps

08/15/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	987	736	775	538	195
v/c Ratio	0.95	0.94	0.38	0.53	0.33
Control Delay	39.1	46.8	7.9	22.0	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	46.8	7.9	22.0	5.0
Queue Length 50th (ft)	166	147	76	93	0
Queue Length 95th (ft)	#287	#247	108	138	41
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1041	786	2063	1007	590
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	0.95	0.94	0.38	0.53	0.33

Intersection Summary

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

Queues

18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	514	3	520	1313	777	285
v/c Ratio	0.40	0.00	0.79	0.83	0.49	0.33
Control Delay	12.9	10.0	22.8	18.0	11.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	10.0	22.8	18.0	11.0	2.6
Queue Length 50th (ft)	55	0	101	160	78	0
Queue Length 95th (ft)	87	2	#251	#254	117	31
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1270	1309	655	1584	1592	869
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.00	0.79	0.83	0.49	0.33

Intersection Summary

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

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	52	51	609	380	1355	915	249
v/c Ratio	0.10	0.10	0.38	0.63	0.70	0.60	0.38
Control Delay	15.9	15.9	0.7	28.4	12.3	19.9	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	15.9	15.9	0.7	28.4	12.8	19.9	4.6
Queue Length 50th (ft)	13	13	0	66	168	102	0
Queue Length 95th (ft)	36	36	0	105	235	139	43
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	506	1583	600	1946	1525	649
Starvation Cap Reductn	0	0	0	0	226	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.10	0.38	0.63	0.79	0.60	0.38

Intersection Summary

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	686	710	121	1206	112	247	11
v/c Ratio	0.06	0.60	0.72	0.55	0.45	0.19	0.36	0.06
Control Delay	15.6	19.6	6.3	35.2	9.5	15.8	4.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	19.6	6.3	35.2	9.5	15.8	4.2	0.0
Queue Length 50th (ft)	2	107	0	42	90	29	0	0
Queue Length 95th (ft)	11	156	68	#97	119	61	41	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45		160	50			660	
Base Capacity (vph)	133	1150	993	221	2665	575	681	191
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.60	0.72	0.55	0.45	0.19	0.36	0.06

Intersection Summary

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

Queues

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	111	815	15	857	278	12	4	40	482
v/c Ratio	0.63	0.32	0.07	0.74	0.39	0.02	0.01	0.07	0.68
Control Delay	42.6	8.1	14.1	21.1	4.1	12.8	0.0	13.3	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	8.1	14.1	21.1	4.1	12.8	0.0	13.3	12.5
Queue Length 50th (ft)	36	50	3	128	0	3	0	9	50
Queue Length 95th (ft)	#98	71	14	185	42	12	0	26	140
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	177	2579	202	1158	705	547	598	537	706
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.32	0.07	0.74	0.39	0.02	0.01	0.07	0.68

Intersection Summary

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

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	468	27	680	1445
v/c Ratio	0.46	0.21	0.31	0.90
Control Delay	11.1	35.0	6.9	25.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.1	35.0	6.9	25.9
Queue Length 50th (ft)	37	11	64	281
Queue Length 95th (ft)	75	34	91	#433
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1019	126	2173	1611
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	0.46	0.21	0.31	0.90

Intersection Summary

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

Queues

12: Figueroa St & I-110 NB Ramps

08/15/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	614	704	517	835	260
v/c Ratio	0.60	0.92	0.25	0.81	0.40
Control Delay	17.7	44.9	7.0	29.0	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.7	44.9	7.0	29.0	4.9
Queue Length 50th (ft)	78	141	46	160	0
Queue Length 95th (ft)	126	#237	68	#246	46
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1031	765	2068	1034	646
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.92	0.25	0.81	0.40

Intersection Summary

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

Queues

18: Avalon Blvd & I-405 SB Ramps

08/15/2017



Lane Group	EBL	EBT	EBR	NBT	SBT	SBR
Lane Group Flow (vph)	192	143	317	1539	1077	435
v/c Ratio	0.18	0.13	0.59	0.81	0.56	0.41
Control Delay	15.8	15.4	18.3	15.4	2.5	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	15.4	18.3	15.4	2.5	1.1
Queue Length 50th (ft)	25	19	70	210	16	0
Queue Length 95th (ft)	46	37	143	296	m19	m0
Internal Link Dist (ft)		442		757	336	
Turn Bay Length (ft)						
Base Capacity (vph)	1058	1091	541	1897	1916	1056
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.13	0.59	0.81	0.56	0.41

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	51	51	446	435	1074	1414	566
v/c Ratio	0.10	0.10	0.28	0.88	0.55	0.84	0.63
Control Delay	15.9	15.9	0.4	42.1	13.6	24.5	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.9	15.9	0.4	42.1	13.6	24.5	5.2
Queue Length 50th (ft)	13	13	0	89	147	169	0
Queue Length 95th (ft)	36	36	0	m#129	m204	#226	59
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	504	1583	492	1946	1686	903
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.10	0.28	0.88	0.55	0.84	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	16	1176	903	118	1152	57	64	8
v/c Ratio	0.10	0.93	0.79	0.73	0.43	0.10	0.11	0.04
Control Delay	15.0	33.4	8.0	50.6	10.1	14.8	1.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	33.4	8.0	50.6	10.1	14.8	1.8	0.0
Queue Length 50th (ft)	4	209	2	47	75	14	0	0
Queue Length 95th (ft)	16	#335	#107	m#80	132	36	10	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45		160	50			660	
Base Capacity (vph)	156	1268	1141	162	2665	575	588	191
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.93	0.79	0.73	0.43	0.10	0.11	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	148	1102	26	758	427	62	23	51	478
v/c Ratio	0.59	0.41	0.18	0.69	0.55	0.12	0.04	0.11	0.63
Control Delay	38.0	10.4	19.3	22.3	5.0	15.1	0.1	15.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.0	10.4	19.3	22.3	5.0	15.1	0.1	15.0	8.5
Queue Length 50th (ft)	61	68	7	125	0	15	0	13	28
Queue Length 95th (ft)	m69	m83	25	180	55	39	0	34	104
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	250	2662	141	1091	783	509	588	482	764
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.41	0.18	0.69	0.55	0.12	0.04	0.11	0.63

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

FUTURE PLUS PROJECT

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 44.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	203	301	955	0	0	744
Future Vol, veh/h	203	301	955	0	0	744
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	-	-	-	-
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	221	327	1038	0	0	809

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1442	519	0
Stage 1	1038	-	-
Stage 2	404	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 123	502	0
Stage 1	302	-	0
Stage 2	643	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 123	502	-
Mov Cap-2 Maneuver	~ 123	-	-
Stage 1	302	-	-
Stage 2	643	-	-

Approach	WB	NB	SB
HCM Control Delay, s	195.4	0	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBTWBLn1WBLn2	SBT
Capacity (veh/h)	- 123 502	-
HCM Lane V/C Ratio	- 1.794 0.652	-
HCM Control Delay (s)	-\$ 448.6 24.6	-
HCM Lane LOS	- F C	-
HCM 95th %tile Q(veh)	- 17.1 4.6	-

Notes

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

HCM 2010 Signalized Intersection Summary
 4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	388	197	30	758	0	0	758	86
Future Volume (veh/h)	0	0	0	89	388	197	30	758	0	0	758	86
Number				3	8	18	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	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				97	422	214	33	824	0	0	824	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	0	2	2
Cap, veh/h				138	614	332	151	1917	0	0	1351	0
Arrive On Green				0.31	0.31	0.31	0.17	1.00	0.00	0.00	0.38	0.00
Sat Flow, veh/h				446	1992	1076	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				400	0	333	33	824	0	0	824	0
Grp Sat Flow(s),veh/h/ln				1840	0	1673	1774	1770	0	0	1770	0
Q Serve(g_s), s				11.5	0.0	10.3	1.0	0.0	0.0	0.0	11.3	0.0
Cycle Q Clear(g_c), s				11.5	0.0	10.3	1.0	0.0	0.0	0.0	11.3	0.0
Prop In Lane				0.24		0.64	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				567	0	516	151	1917	0	0	1351	0
V/C Ratio(X)				0.71	0.00	0.65	0.22	0.43	0.00	0.00	0.61	0.00
Avail Cap(c_a), veh/h				567	0	516	151	1917	0	0	1351	0
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				18.3	0.0	17.9	23.2	0.0	0.0	0.0	15.0	0.0
Incr Delay (d2), s/veh				7.2	0.0	6.1	3.3	0.7	0.0	0.0	2.1	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(50%),veh/ln				6.9	0.0	5.6	0.6	0.2	0.0	0.0	5.9	0.0
LnGrp Delay(d),s/veh				25.5	0.0	24.0	26.5	0.7	0.0	0.0	17.0	0.0
LnGrp LOS				C		C	C	A			B	
Approach Vol, veh/h					733			857			824	
Approach Delay, s/veh					24.9			1.7			17.0	
Approach LOS					C			A			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.0			9.6	27.4		23.0				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		32.5			5.1	22.9		18.5				
Max Q Clear Time (g_c+I1), s		2.0			3.0	13.3		13.5				
Green Ext Time (p_c), s		14.9			0.0	6.9		2.0				
Intersection Summary												
HCM 2010 Ctrl Delay				14.0								
HCM 2010 LOS				B								

Intersection

Intersection Delay, s/veh 73.1

Intersection LOS F

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	891	657	0	96	146	0	383	99
Future Vol, veh/h	0	891	657	0	96	146	0	383	99
Peak Hour Factor	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
Mvmt Flow	0	968	714	0	104	159	0	416	108
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	65	18.7	126.2
HCM LOS	F	C	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	92%	0%
Vol Thru, %	100%	0%	0%	0%	0%	8%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	146	446	446	657	416	66
LT Vol	0	0	446	446	0	383	0
Through Vol	96	0	0	0	0	33	66
RT Vol	0	146	0	0	657	0	0
Lane Flow Rate	104	159	484	484	714	452	72
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.289	0.408	1.035	1.035	0.945	1.203	0.182
Departure Headway (Hd)	10.714	9.987	8.119	8.119	5.116	9.77	9.299
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	338	363	450	450	714	375	388
Service Time	8.414	7.687	5.819	5.819	2.816	7.47	6.999
HCM Lane V/C Ratio	0.308	0.438	1.076	1.076	1	1.205	0.186
HCM Control Delay	17.7	19.4	80.7	80.7	43.7	144	14.1
HCM Lane LOS	C	C	F	F	E	F	B
HCM 95th-tile Q	1.2	1.9	14.1	14.1	13.6	18.4	0.7

HCM 2010 Signalized Intersection Summary
 12: Figueroa St & I-110 NB Ramps

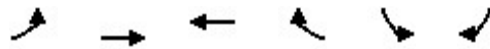
08/17/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	TT		TT	↑↑	↑↑	T		
Traffic Volume (veh/h)	633	351	677	713	510	490		
Future Volume (veh/h)	633	351	677	713	510	490		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	535	546	736	775	554	533		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	641	583	860	1907	845	378		
Arrive On Green	0.36	0.36	0.25	0.54	0.24	0.24		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	535	546	736	775	554	533		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	24.8	29.4	18.4	11.6	12.7	21.5		
Cycle Q Clear(g_c), s	24.8	29.4	18.4	11.6	12.7	21.5		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	641	583	860	1907	845	378		
V/C Ratio(X)	0.84	0.94	0.86	0.41	0.66	1.41		
Avail Cap(c_a), veh/h	641	583	860	1907	845	378		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	26.3	27.7	32.2	12.3	30.9	34.3		
Incr Delay (d2), s/veh	12.2	24.5	10.6	0.6	3.9	199.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.2	26.2	10.0	5.8	6.7	30.3		
LnGrp Delay(d),s/veh	38.5	52.2	42.8	12.9	34.9	233.5		
LnGrp LOS	D	D	D	B	C	F		
Approach Vol, veh/h	1081			1511	1087			
Approach Delay, s/veh	45.4			27.5	132.3			
Approach LOS	D			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		53.0		37.0	27.0	26.0		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		48.5		32.5	22.5	21.5		
Max Q Clear Time (g_c+I1), s		13.6		31.4	20.4	23.5		
Green Ext Time (p_c), s		15.5		0.6	0.7	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			63.7					
HCM 2010 LOS			E					
Notes								

HCM 2010 Signalized Intersection Summary
 17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑	↗	↘↗	↗		
Traffic Volume (veh/h)	4	448	338	298	952	152		
Future Volume (veh/h)	4	448	338	298	952	152		
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	1900	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	4	487	367	0	1035	0		
Adj No. of Lanes	0	3	2	1	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	49	907	651	291	2416	1112		
Arrive On Green	0.18	0.18	0.18	0.00	0.70	0.00		
Sat Flow, veh/h	11	5080	3632	1583	3442	1583		
Grp Volume(v), veh/h	185	306	367	0	1035	0		
Grp Sat Flow(s),veh/h/ln	1853	1543	1770	1583	1721	1583		
Q Serve(g_s), s	0.0	7.1	7.5	0.0	10.1	0.0		
Cycle Q Clear(g_c), s	7.1	7.1	7.5	0.0	10.1	0.0		
Prop In Lane	0.02			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	388	568	651	291	2416	1112		
V/C Ratio(X)	0.48	0.54	0.56	0.00	0.43	0.00		
Avail Cap(c_a), veh/h	641	995	1142	511	2416	1112		
HCM Platoon Ratio	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	0.00		
Uniform Delay (d), s/veh	29.2	29.2	29.4	0.0	5.0	0.0		
Incr Delay (d2), s/veh	0.9	0.8	0.8	0.0	0.6	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.7	3.1	3.7	0.0	4.9	0.0		
LnGrp Delay(d),s/veh	30.1	30.0	30.1	0.0	5.6	0.0		
LnGrp LOS	C	C	C		A			
Approach Vol, veh/h		491	367		1035			
Approach Delay, s/veh		30.1	30.1		5.6			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				19.0		60.0		19.0
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				25.5		55.5		25.5
Max Q Clear Time (g_c+I1), s				9.1		12.1		9.5
Green Ext Time (p_c), s				5.1		4.7		5.1
Intersection Summary								
HCM 2010 Ctrl Delay			16.7					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↖	↖	↖	↖↖	↖↖			↖↖↖	↖
Traffic Volume (veh/h)	0	0	0	263	2	588	458	1256	0	0	915	229
Future Volume (veh/h)	0	0	0	263	2	588	458	1256	0	0	915	229
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				287	0	0	498	1365	0	0	995	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				1064	0	475	602	1947	0	0	1526	475
Arrive On Green				0.30	0.00	0.00	0.17	0.55	0.00	0.00	0.30	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				287	0	0	498	1365	0	0	995	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				3.7	0.0	0.0	8.4	17.0	0.0	0.0	10.2	0.0
Cycle Q Clear(g_c), s				3.7	0.0	0.0	8.4	17.0	0.0	0.0	10.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				1064	0	475	602	1947	0	0	1526	475
V/C Ratio(X)				0.27	0.00	0.00	0.83	0.70	0.00	0.00	0.65	0.00
Avail Cap(c_a), veh/h				1064	0	475	602	1947	0	0	1526	475
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				16.0	0.0	0.0	23.9	9.9	0.0	0.0	18.3	0.0
Incr Delay (d2), s/veh				0.6	0.0	0.0	12.3	2.1	0.0	0.0	2.2	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(50%),veh/ln				1.9	0.0	0.0	5.0	8.7	0.0	0.0	5.0	0.0
LnGrp Delay(d),s/veh				16.6	0.0	0.0	36.2	12.0	0.0	0.0	20.5	0.0
LnGrp LOS				B			D	B			C	
Approach Vol, veh/h					287			1863			995	
Approach Delay, s/veh					16.6			18.5			20.5	
Approach LOS					B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		37.5			15.0	22.5		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		33.0			10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s		19.0			10.4	12.2		5.7				
Green Ext Time (p_c), s		11.9			0.0	5.3		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				18.9								
HCM 2010 LOS				B								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	708	653	111	1167	20	103	0	227	0	0	10
Future Volume (veh/h)	7	708	653	111	1167	20	103	0	227	0	0	10
Number	7	4	14	3	8	18	5	2	12			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	8	770	710	121	1268	22	112	0	247			
Adj No. of Lanes	1	2	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	270	1158	518	177	2621	45	581	0	518			
Arrive On Green	0.33	0.33	0.33	0.20	1.00	1.00	0.33	0.00	0.33			
Sat Flow, veh/h	426	3539	1583	1774	5148	89	1774	0	1583			
Grp Volume(v), veh/h	8	770	710	121	835	455	112	0	247			
Grp Sat Flow(s),veh/h/ln	426	1770	1583	1774	1695	1847	1774	0	1583			
Q Serve(g_s), s	0.7	10.3	18.0	3.5	0.0	0.0	2.5	0.0	6.8			
Cycle Q Clear(g_c), s	0.7	10.3	18.0	3.5	0.0	0.0	2.5	0.0	6.8			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	270	1158	518	177	1726	940	581	0	518			
V/C Ratio(X)	0.03	0.66	1.37	0.68	0.48	0.48	0.19	0.00	0.48			
Avail Cap(c_a), veh/h	270	1158	518	177	1726	940	581	0	518			
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	12.7	15.9	18.5	21.2	0.0	0.0	13.3	0.0	14.7			
Incr Delay (d2), s/veh	0.2	3.0	178.6	19.2	1.0	1.8	0.7	0.0	3.1			
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(50%),veh/ln	0.1	5.5	33.5	2.6	0.2	0.5	1.3	0.0	3.4			
LnGrp Delay(d),s/veh	12.9	18.9	197.1	40.4	1.0	1.8	14.0	0.0	17.9			
LnGrp LOS	B	B	F	D	A	A	B		B			
Approach Vol, veh/h		1488			1411			359				
Approach Delay, s/veh		103.9			4.6			16.7				
Approach LOS		F			A			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		22.5	10.0	22.5				32.5				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.0	5.5	18.0				28.0				
Max Q Clear Time (g_c+1), s		8.8	5.5	20.0				2.0				
Green Ext Time (p_c), s		0.8	0.0	0.0				20.2				
Intersection Summary												
HCM 2010 Ctrl Delay			51.3									
HCM 2010 LOS			D									

HCM 2010 Signalized Intersection Summary
 27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑		↔		↔	↔		↔	↔
Traffic Volume (veh/h)	102	787	40	14	866	256	7	4	4	22	15	443
Future Volume (veh/h)	102	787	40	14	866	256	7	4	4	22	15	443
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	111	855	43	15	941	278	8	4	4	24	16	0
Adj No. of Lanes	1	3	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	177	2525	127	333	1158	518	422	190	518	388	234	518
Arrive On Green	0.20	1.00	1.00	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.00
Sat Flow, veh/h	1774	4960	249	618	3539	1583	957	582	1583	864	714	1583
Grp Volume(v), veh/h	111	584	314	15	941	278	12	0	4	40	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1819	618	1770	1583	1539	0	1583	1578	0	1583
Q Serve(g_s), s	3.1	0.0	0.0	0.9	13.4	7.9	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.0	0.9	13.4	7.9	0.2	0.0	0.1	0.8	0.0	0.0
Prop In Lane	1.00		0.14	1.00		1.00	0.67		1.00	0.60		1.00
Lane Grp Cap(c), veh/h	177	1726	926	333	1158	518	613	0	518	621	0	518
V/C Ratio(X)	0.63	0.34	0.34	0.05	0.81	0.54	0.02	0.00	0.01	0.06	0.00	0.00
Avail Cap(c_a), veh/h	177	1726	926	333	1158	518	613	0	518	621	0	518
HCM Platoon Ratio	2.00	2.00	2.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.1	0.0	0.0	12.8	17.0	15.1	12.5	0.0	12.5	12.7	0.0	0.0
Incr Delay (d2), s/veh	15.5	0.5	1.0	0.3	6.3	3.9	0.1	0.0	0.0	0.2	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.1	0.3	0.2	7.5	4.0	0.1	0.0	0.0	0.4	0.0	0.0
LnGrp Delay(d),s/veh	36.6	0.5	1.0	13.0	23.2	19.0	12.6	0.0	12.5	12.9	0.0	0.0
LnGrp LOS	D	A	A	B	C	B	B		B	B		
Approach Vol, veh/h		1009			1234			16			40	
Approach Delay, s/veh		4.6			22.2			12.6			12.9	
Approach LOS		A			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		22.5		32.5		22.5	10.0	22.5				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.0		28.0		18.0	5.5	18.0				
Max Q Clear Time (g_c+I1), s		2.2		2.0		2.8	5.1	15.4				
Green Ext Time (p_c), s		0.2		16.5		0.2	0.0	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				14.2								
HCM 2010 LOS				B								

HCM 2010 TWSC
 2: I-405 NB Off-Ramp & Figueroa St

08/15/2017

Intersection

Int Delay, s/veh 9.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	79	135	802	0	0	1766
Future Vol, veh/h	79	135	802	0	0	1766
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	-	-	-	-
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	86	147	872	0	0	1920

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1832	436	0
Stage 1	872	-	-
Stage 2	960	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 68	568	0
Stage 1	369	-	0
Stage 2	332	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 68	568	-
Mov Cap-2 Maneuver	~ 68	-	-
Stage 1	369	-	-
Stage 2	332	-	-

Approach	WB	NB	SB
HCM Control Delay, s	119.4	0	0
HCM LOS	F		

















Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 68	568	-
HCM Lane V/C Ratio	- 1.263	0.258	-
HCM Control Delay (s)	-\$ 300.3	13.5	-
HCM Lane LOS	- F	B	-
HCM 95th %tile Q(veh)	- 6.9	1	-

Notes

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

HCM 2010 Signalized Intersection Summary
 4: I-405 NB Off-Ramp & Main St

08/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	86	124	242	25	728	0	1	1389	62
Future Volume (veh/h)	0	0	0	86	124	242	25	728	0	1	1389	62
Number				3	8	18	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	1863	1863	0	1900	1863	1900
Adj Flow Rate, veh/h				93	135	263	27	791	0	1	1510	0
Adj No. of Lanes				0	2	0	1	2	0	0	2	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	2	2	0	2	2	2
Cap, veh/h				179	259	380	118	2265	0	48	1783	0
Arrive On Green				0.24	0.24	0.24	0.07	0.64	0.00	0.51	0.51	0.00
Sat Flow, veh/h				745	1081	1583	1774	3632	0	0	3557	0
Grp Volume(v), veh/h				228	0	263	27	791	0	810	701	0
Grp Sat Flow(s),veh/h/ln				1826	0	1583	1774	1770	0	1862	1610	0
Q Serve(g_s), s				8.1	0.0	11.4	1.1	7.8	0.0	0.0	28.1	0.0
Cycle Q Clear(g_c), s				8.1	0.0	11.4	1.1	7.8	0.0	28.1	28.1	0.0
Prop In Lane				0.41		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				438	0	380	118	2265	0	1004	827	0
V/C Ratio(X)				0.52	0.00	0.69	0.23	0.35	0.00	0.81	0.85	0.00
Avail Cap(c_a), veh/h				438	0	380	118	2265	0	1004	827	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	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh				24.8	0.0	26.0	33.2	6.3	0.0	15.7	15.7	0.0
Incr Delay (d2), s/veh				4.4	0.0	9.9	4.4	0.4	0.0	6.9	10.5	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(50%),veh/ln				4.6	0.0	6.0	0.7	3.9	0.0	16.1	14.7	0.0
LnGrp Delay(d),s/veh				29.1	0.0	35.9	37.6	6.7	0.0	22.7	26.2	0.0
LnGrp LOS				C		D	D	A		C	C	
Approach Vol, veh/h					491			818			1511	
Approach Delay, s/veh					32.8			7.7			24.3	
Approach LOS					C			A			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		52.5			9.5	43.0		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		48.0			5.0	38.5		18.0				
Max Q Clear Time (g_c+I1), s		9.8			3.1	30.1		13.4				
Green Ext Time (p_c), s		25.1			0.0	7.3		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				21.0								
HCM 2010 LOS				C								

Intersection

Intersection Delay, s/veh 207.4
 Intersection LOS F

Movement	WBU	WBL	WBR	NBU	NBT	NBR	SBU	SBL	SBT
Lane Configurations		↔↔	↔		↑	↔			↔↔
Traffic Vol, veh/h	0	384	666	0	53	472	0	686	116
Future Vol, veh/h	0	384	666	0	53	472	0	686	116
Peak Hour Factor	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
Mvmt Flow	0	417	724	0	58	513	0	746	126
Number of Lanes	0	2	1	0	1	1	0	0	2

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	2	0	3
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	2	3	0
HCM Control Delay	57	125.5	457.8
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	100%	0%	95%	0%
Vol Thru, %	100%	0%	0%	0%	0%	5%	100%
Vol Right, %	0%	100%	0%	0%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	472	192	192	666	725	77
LT Vol	0	0	192	192	0	686	0
Through Vol	53	0	0	0	0	39	77
RT Vol	0	472	0	0	666	0	0
Lane Flow Rate	58	513	209	209	724	788	84
Geometry Grp	8	8	7	7	7	8	8
Degree of Util (X)	0.144	1.182	0.474	0.474	1.053	2.053	0.208
Departure Headway (Hd)	10.895	10.155	9.608	9.608	6.51	9.941	9.449
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	331	364	378	378	565	370	382
Service Time	8.595	7.855	7.308	7.308	4.21	7.641	7.149
HCM Lane V/C Ratio	0.175	1.409	0.553	0.553	1.281	2.13	0.22
HCM Control Delay	15.4	137.9	20.7	20.7	77.9	505.1	14.6
HCM Lane LOS	C	F	C	C	F	F	B
HCM 95th-tile Q	0.5	17.2	2.5	2.5	16.7	52.9	0.8

HCM 2010 Signalized Intersection Summary
 12: Figueroa St & I-110 NB Ramps

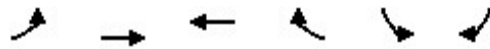
08/17/2017



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations	TTT		TT	↑↑	↑↑	T		
Traffic Volume (veh/h)	453	245	648	476	792	678		
Future Volume (veh/h)	453	245	648	476	792	678		
Number	7	14	5	2	6	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	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	379	387	704	517	861	737		
Adj No. of Lanes	1	1	2	2	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	0	2	2	2	2		
Cap, veh/h	530	482	762	2027	1016	455		
Arrive On Green	0.30	0.30	0.22	0.57	0.29	0.29		
Sat Flow, veh/h	1774	1615	3442	3632	3632	1583		
Grp Volume(v), veh/h	379	387	704	517	861	737		
Grp Sat Flow(s),veh/h/ln	1774	1615	1721	1770	1770	1583		
Q Serve(g_s), s	13.3	15.5	14.0	5.1	16.0	20.1		
Cycle Q Clear(g_c), s	13.3	15.5	14.0	5.1	16.0	20.1		
Prop In Lane	1.00	1.00	1.00			1.00		
Lane Grp Cap(c), veh/h	530	482	762	2027	1016	455		
V/C Ratio(X)	0.72	0.80	0.92	0.25	0.85	1.62		
Avail Cap(c_a), veh/h	530	482	762	2027	1016	455		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	21.9	22.6	26.7	7.5	23.5	25.0		
Incr Delay (d2), s/veh	8.0	13.2	18.6	0.3	8.7	289.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.7	14.5	8.6	2.5	9.0	45.3		
LnGrp Delay(d),s/veh	29.9	35.9	45.2	7.8	32.2	314.4		
LnGrp LOS	C	D	D	A	C	F		
Approach Vol, veh/h	766			1221	1598			
Approach Delay, s/veh	32.9			29.4	162.4			
Approach LOS	C			C	F			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		44.6		25.4	20.0	24.6		
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		
Max Green Setting (Gmax), s		40.1		20.9	15.5	20.1		
Max Q Clear Time (g_c+I1), s		7.1		17.5	16.0	22.1		
Green Ext Time (p_c), s		17.6		1.0	0.0	0.0		
Intersection Summary								
HCM 2010 Ctrl Delay			89.4					
HCM 2010 LOS			F					
Notes								

HCM 2010 Signalized Intersection Summary
 17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations		↑↑↑	↑↑	↗	↖↗	↗		
Traffic Volume (veh/h)	2	868	508	415	600	242		
Future Volume (veh/h)	2	868	508	415	600	242		
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	1900	1863	1863	1863	1863	1863		
Adj Flow Rate, veh/h	2	943	552	0	652	0		
Adj No. of Lanes	0	3	2	1	2	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	49	1709	1223	547	1834	844		
Arrive On Green	0.35	0.35	0.35	0.00	0.53	0.00		
Sat Flow, veh/h	2	5097	3632	1583	3442	1583		
Grp Volume(v), veh/h	356	589	552	0	652	0		
Grp Sat Flow(s),veh/h/ln	1861	1543	1770	1583	1721	1583		
Q Serve(g_s), s	0.0	11.5	9.0	0.0	8.1	0.0		
Cycle Q Clear(g_c), s	11.4	11.5	9.0	0.0	8.1	0.0		
Prop In Lane	0.01			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	692	1066	1223	547	1834	844		
V/C Ratio(X)	0.51	0.55	0.45	0.00	0.36	0.00		
Avail Cap(c_a), veh/h	1088	1727	1982	887	1834	844		
HCM Platoon Ratio	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	0.00		
Uniform Delay (d), s/veh	19.6	19.6	18.8	0.0	10.0	0.0		
Incr Delay (d2), s/veh	0.6	0.4	0.3	0.0	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	5.9	4.9	4.4	0.0	3.9	0.0		
LnGrp Delay(d),s/veh	20.2	20.1	19.1	0.0	10.5	0.0		
LnGrp LOS	C	C	B		B			
Approach Vol, veh/h		945	552		652			
Approach Delay, s/veh		20.1	19.1		10.5			
Approach LOS		C	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				30.1		44.0		30.1
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				41.5		39.5		41.5
Max Q Clear Time (g_c+I1), s				13.5		10.1		11.0
Green Ext Time (p_c), s				12.2		2.6		12.6
Intersection Summary								
HCM 2010 Ctrl Delay			16.9					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary
 19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↵	↵	↵	↵↵	↵↵			↵↵↵	↵
Traffic Volume (veh/h)	0	0	0	385	0	469	613	1016	0	0	1331	521
Future Volume (veh/h)	0	0	0	385	0	469	613	1016	0	0	1331	521
Number				3	8	18	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	1863	1863	0	0	1863	1863
Adj Flow Rate, veh/h				418	0	0	666	1104	0	0	1447	0
Adj No. of Lanes				2	0	1	2	2	0	0	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				912	0	407	762	2174	0	0	1671	520
Arrive On Green				0.26	0.00	0.00	0.22	0.61	0.00	0.00	0.33	0.00
Sat Flow, veh/h				3548	0	1583	3442	3632	0	0	5253	1583
Grp Volume(v), veh/h				418	0	0	666	1104	0	0	1447	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1721	1770	0	0	1695	1583
Q Serve(g_s), s				6.9	0.0	0.0	13.1	12.2	0.0	0.0	18.7	0.0
Cycle Q Clear(g_c), s				6.9	0.0	0.0	13.1	12.2	0.0	0.0	18.7	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				912	0	407	762	2174	0	0	1671	520
V/C Ratio(X)				0.46	0.00	0.00	0.87	0.51	0.00	0.00	0.87	0.00
Avail Cap(c_a), veh/h				912	0	407	762	2174	0	0	1671	520
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	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				21.9	0.0	0.0	26.3	7.6	0.0	0.0	22.1	0.0
Incr Delay (d2), s/veh				1.7	0.0	0.0	13.3	0.9	0.0	0.0	6.3	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(50%),veh/ln				3.6	0.0	0.0	7.6	6.1	0.0	0.0	9.7	0.0
LnGrp Delay(d),s/veh				23.6	0.0	0.0	39.6	8.4	0.0	0.0	28.4	0.0
LnGrp LOS				C			D	A			C	
Approach Vol, veh/h					418			1770			1447	
Approach Delay, s/veh					23.6			20.1			28.4	
Approach LOS					C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		47.5			20.0	27.5		22.5				
Change Period (Y+Rc), s		4.5			4.5	4.5		4.5				
Max Green Setting (Gmax), s		43.0			15.5	23.0		18.0				
Max Q Clear Time (g_c+I1), s		14.2			15.1	20.7		8.9				
Green Ext Time (p_c), s		22.6			0.1	2.2		1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				23.8								
HCM 2010 LOS				C								
Notes												

User approved volume balancing among the lanes for turning movement.

HCM 2010 Signalized Intersection Summary
 26: I-405 SB Ramps & Carson St

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1161	831	109	1140	22	52	0	59	0	0	7
Future Volume (veh/h)	15	1161	831	109	1140	22	52	0	59	0	0	7
Number	7	4	14	3	8	18	5	2	12			
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	1863	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	16	1262	903	118	1239	24	57	0	64			
Adj No. of Lanes	1	2	1	1	3	0	1	0	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	2	2	2	2	2	0	2			
Cap, veh/h	289	1443	646	177	2963	57	505	0	451			
Arrive On Green	0.41	0.41	0.41	0.10	0.58	0.58	0.28	0.00	0.28			
Sat Flow, veh/h	437	3539	1583	1774	5136	99	1774	0	1583			
Grp Volume(v), veh/h	16	1262	903	118	818	445	57	0	64			
Grp Sat Flow(s),veh/h/ln	437	1770	1583	1774	1695	1845	1774	0	1583			
Q Serve(g_s), s	1.5	21.3	26.5	4.2	8.7	8.7	1.5	0.0	2.0			
Cycle Q Clear(g_c), s	1.5	21.3	26.5	4.2	8.7	8.7	1.5	0.0	2.0			
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00			
Lane Grp Cap(c), veh/h	289	1443	646	177	1956	1065	505	0	451			
V/C Ratio(X)	0.06	0.87	1.40	0.67	0.42	0.42	0.11	0.00	0.14			
Avail Cap(c_a), veh/h	289	1443	646	177	1956	1065	505	0	451			
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	1.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	11.8	17.7	19.3	28.2	7.7	7.7	17.2	0.0	17.3			
Incr Delay (d2), s/veh	0.4	7.7	188.8	18.0	0.7	1.2	0.5	0.0	0.7			
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(50%),veh/ln	0.2	11.9	45.3	2.9	4.2	4.7	0.8	0.0	0.9			
LnGrp Delay(d),s/veh	12.2	25.4	208.0	46.2	8.3	8.9	17.6	0.0	18.0			
LnGrp LOS	B	C	F	D	A	A	B		B			
Approach Vol, veh/h		2181			1381			121				
Approach Delay, s/veh		100.9			11.7			17.8				
Approach LOS		F			B			B				
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2	3	4				8				
Phs Duration (G+Y+Rc), s		23.0	11.0	31.0				42.0				
Change Period (Y+Rc), s		4.5	4.5	4.5				4.5				
Max Green Setting (Gmax), s		18.5	6.5	26.5				37.5				
Max Q Clear Time (g_c+1), s		4.0	6.2	28.5				10.7				
Green Ext Time (p_c), s		0.3	0.0	0.0				23.9				
Intersection Summary												
HCM 2010 Ctrl Delay			64.7									
HCM 2010 LOS			E									

HCM 2010 Signalized Intersection Summary

27: Carson St & I-405 NB Ramps

08/15/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↑↑↑			↔ ↑↑		↔		↑	↔		↑	↔
Traffic Volume (veh/h)	136	1057	36	24	799	393	36	21	21	39	8	440
Future Volume (veh/h)	136	1057	36	24	799	393	36	21	21	39	8	440
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	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	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	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1900	1863	1863	1900	1863	1863
Adj Flow Rate, veh/h	148	1149	39	26	868	427	39	23	23	42	9	0
Adj No. of Lanes	1	3	0	1	2	1	0	1	1	0	1	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	251	2652	90	265	1091	488	397	213	515	463	89	515
Arrive On Green	0.14	0.52	0.52	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.32	0.00
Sat Flow, veh/h	1774	5051	171	470	3539	1583	922	656	1583	1088	274	1583
Grp Volume(v), veh/h	148	771	417	26	868	427	62	0	23	51	0	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1832	470	1770	1583	1578	0	1583	1362	0	1583
Q Serve(g_s), s	4.7	8.4	8.4	2.4	13.5	15.3	0.0	0.0	0.6	1.0	0.0	0.0
Cycle Q Clear(g_c), s	4.7	8.4	8.4	2.4	13.5	15.3	1.4	0.0	0.6	2.4	0.0	0.0
Prop In Lane	1.00		0.09	1.00		1.00	0.63		1.00	0.82		1.00
Lane Grp Cap(c), veh/h	251	1780	962	265	1091	488	611	0	515	552	0	515
V/C Ratio(X)	0.59	0.43	0.43	0.10	0.80	0.87	0.10	0.00	0.04	0.09	0.00	0.00
Avail Cap(c_a), veh/h	251	1780	962	265	1091	488	611	0	515	552	0	515
HCM Platoon Ratio	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.1	8.8	8.8	15.2	19.0	19.7	14.1	0.0	13.9	14.5	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.8	1.4	0.7	6.0	19.2	0.3	0.0	0.2	0.3	0.0	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.0	4.0	4.6	0.4	7.4	9.2	0.8	0.0	0.3	0.6	0.0	0.0
LnGrp Delay(d),s/veh	33.9	9.5	10.2	15.9	25.0	38.8	14.5	0.0	14.0	14.9	0.0	0.0
LnGrp LOS	C	A	B	B	C	D	B		B	B		
Approach Vol, veh/h		1336			1321			85			51	
Approach Delay, s/veh		12.4			29.3			14.4			14.9	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6	7	8				
Phs Duration (G+Y+Rc), s		24.0		36.0		24.0	13.0	23.0				
Change Period (Y+Rc), s		4.5		4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5		31.5		19.5	8.5	18.5				
Max Q Clear Time (g_c+I1), s		3.4		10.4		4.4	6.7	17.3				
Green Ext Time (p_c), s		0.5		16.2		0.5	0.1	1.1				
Intersection Summary												
HCM 2010 Ctrl Delay				20.5								
HCM 2010 LOS				C								

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	733	33	824	917
v/c Ratio	0.66	0.22	0.43	0.68
Control Delay	18.6	33.9	7.2	18.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.6	33.9	7.2	18.3
Queue Length 50th (ft)	100	14	37	137
Queue Length 95th (ft)	154	m20	95	196
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	1110	150	1916	1344
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	0.66	0.22	0.43	0.68

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

12: Figueroa St & I-110 NB Ramps

08/17/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1070	736	775	554	533
v/c Ratio	0.83	0.86	0.41	0.66	0.68
Control Delay	29.6	43.8	13.1	35.2	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	43.8	13.1	35.2	7.8
Queue Length 50th (ft)	248	206	128	150	0
Queue Length 95th (ft)	332	#300	171	206	86
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1286	858	1907	845	783
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	0.86	0.41	0.66	0.68

Intersection Summary

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

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	491	367	324	1035	165
v/c Ratio	0.58	0.59	0.20	0.43	0.10
Control Delay	32.4	33.5	0.3	5.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	33.5	0.3	5.8	0.1
Queue Length 50th (ft)	81	87	0	90	0
Queue Length 95th (ft)	113	130	0	150	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	1548	1151	1583	2430	1583
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	0.32	0.32	0.20	0.43	0.10

Intersection Summary

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	143	145	639	498	1365	995	249
v/c Ratio	0.28	0.29	0.40	0.83	0.70	0.65	0.38
Control Delay	18.0	18.0	0.8	38.3	12.4	20.7	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	18.0	18.0	0.8	38.3	12.9	20.7	4.6
Queue Length 50th (ft)	41	42	0	90	171	113	0
Queue Length 95th (ft)	83	84	0	#161	238	153	43
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	504	505	1583	600	1946	1525	649
Starvation Cap Reductn	0	0	0	0	225	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.29	0.40	0.83	0.79	0.65	0.38

Intersection Summary

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

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	8	770	710	121	1290	112	247	11
v/c Ratio	0.06	0.66	0.71	0.68	0.50	0.19	0.36	0.05
Control Delay	14.1	19.3	6.2	40.8	11.2	14.5	4.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	19.3	6.2	40.8	11.2	14.5	4.1	0.0
Queue Length 50th (ft)	2	111	0	44	94	26	0	0
Queue Length 95th (ft)	10	163	64	m55	m142	56	39	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45		160	50			660	
Base Capacity (vph)	135	1158	995	177	2584	579	684	208
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.66	0.71	0.68	0.50	0.19	0.36	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Queues

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	111	898	15	941	278	12	4	40	482
v/c Ratio	0.63	0.35	0.08	0.81	0.39	0.02	0.01	0.07	0.69
Control Delay	43.5	8.8	14.3	24.3	4.1	12.8	0.0	13.3	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.5	8.8	14.3	24.3	4.1	12.8	0.0	13.3	12.9
Queue Length 50th (ft)	41	41	3	145	0	3	0	9	52
Queue Length 95th (ft)	m#70	86	14	#236	42	12	0	26	143
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	177	2580	185	1158	705	547	598	537	701
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.35	0.08	0.81	0.39	0.02	0.01	0.07	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Queues

4: I-405 NB Off-Ramp & Main St

08/15/2017



Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	491	27	791	1578
v/c Ratio	0.52	0.23	0.35	0.91
Control Delay	15.7	38.1	6.8	26.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	15.7	38.1	6.8	26.6
Queue Length 50th (ft)	55	12	78	330
Queue Length 95th (ft)	100	36	107	#500
Internal Link Dist (ft)	962		348	244
Turn Bay Length (ft)		200		
Base Capacity (vph)	939	118	2264	1729
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	0.23	0.35	0.91

Intersection Summary

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

Queues

12: Figueroa St & I-110 NB Ramps

08/17/2017



Lane Group	EBL	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	758	704	517	861	737
v/c Ratio	0.69	0.93	0.26	0.85	0.81
Control Delay	20.8	47.6	7.9	33.3	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	47.6	7.9	33.3	13.0
Queue Length 50th (ft)	116	153	53	182	34
Queue Length 95th (ft)	174	#253	77	#278	#240
Internal Link Dist (ft)	809		502	447	
Turn Bay Length (ft)		230			250
Base Capacity (vph)	1099	760	2027	1016	905
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	0.69	0.93	0.26	0.85	0.81

Intersection Summary

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

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	945	552	451	652	263
v/c Ratio	0.63	0.50	0.28	0.34	0.17
Control Delay	22.7	21.2	0.5	9.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	21.2	0.5	9.8	0.2
Queue Length 50th (ft)	127	101	0	72	0
Queue Length 95th (ft)	165	144	0	130	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2807	2080	1583	1920	1583
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	0.34	0.27	0.28	0.34	0.17

Intersection Summary

Queues

19: I-405 NB Ramps & Avalon Blvd

08/15/2017



Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	209	209	510	666	1104	1447	566
v/c Ratio	0.48	0.48	0.32	0.88	0.51	0.87	0.63
Control Delay	26.6	26.6	0.5	41.3	8.6	29.1	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0
Total Delay	26.6	26.6	0.5	41.3	9.0	29.1	5.4
Queue Length 50th (ft)	80	80	0	143	123	210	0
Queue Length 95th (ft)	144	144	0	#232	166	#276	64
Internal Link Dist (ft)		517			336	523	
Turn Bay Length (ft)			400	200			
Base Capacity (vph)	432	432	1583	760	2173	1670	900
Starvation Cap Reductn	0	0	0	0	553	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.48	0.32	0.88	0.68	0.87	0.63

Intersection Summary

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

Queues

26: I-405 SB Ramps & Carson St

08/15/2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBR	SBT
Lane Group Flow (vph)	16	1262	903	118	1263	57	64	8
v/c Ratio	0.10	0.88	0.78	0.67	0.43	0.11	0.12	0.05
Control Delay	14.1	26.6	7.4	49.1	8.3	18.0	2.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	26.6	7.4	49.1	8.3	18.0	2.5	0.0
Queue Length 50th (ft)	4	233	8	46	91	17	0	0
Queue Length 95th (ft)	16	#359	96	#117	119	41	13	0
Internal Link Dist (ft)		1202			351			58
Turn Bay Length (ft)	45		160	50			660	
Base Capacity (vph)	157	1442	1159	177	2927	503	522	176
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.88	0.78	0.67	0.43	0.11	0.12	0.05

Intersection Summary

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

Queues

27: Carson St & I-405 NB Ramps

08/15/2017



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	148	1188	26	868	427	62	23	51	478
v/c Ratio	0.59	0.45	0.20	0.80	0.55	0.12	0.04	0.11	0.63
Control Delay	35.5	9.4	20.2	25.9	5.0	15.1	0.1	15.0	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	9.4	20.2	25.9	5.0	15.1	0.1	15.0	9.0
Queue Length 50th (ft)	51	87	7	149	0	15	0	13	31
Queue Length 95th (ft)	#115	116	25	#220	55	39	0	34	109
Internal Link Dist (ft)		351		1105		65		1064	
Turn Bay Length (ft)	70		90		160				600
Base Capacity (vph)	250	2662	129	1091	783	509	588	482	757
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.45	0.20	0.80	0.55	0.12	0.04	0.11	0.63

Intersection Summary

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

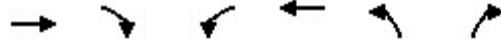
**APPENDIX H:
SITE ACCESS DRIVEWAY ANALYSIS**

EXISTING PLUS PROJECT

Queues

9: Stamps Dr & Del Amo Blvd

09-12-2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	965	451	204	1470	637	161
v/c Ratio	0.54	0.53	0.46	0.54	0.37	0.25
Control Delay	21.2	4.4	36.4	12.1	21.5	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	4.4	36.4	12.1	21.5	5.2
Queue Length 50th (ft)	132	0	47	155	81	0
Queue Length 95th (ft)	181	56	88	189	136	44
Internal Link Dist (ft)	1283			766	560	
Turn Bay Length (ft)			150			
Base Capacity (vph)	2417	989	603	3609	1721	651
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.46	0.34	0.41	0.37	0.25

Intersection Summary

Queues

13: Main St & Lenardo Dr

09-12-2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	163	907	360	93	809
v/c Ratio	0.32	0.38	0.39	0.31	0.43	0.27
Control Delay	36.3	13.1	8.4	1.9	37.1	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.3	13.1	8.4	1.9	37.1	2.2
Queue Length 50th (ft)	27	28	110	0	42	42
Queue Length 95th (ft)	62	69	185	36	85	70
Internal Link Dist (ft)	185		509			240
Turn Bay Length (ft)					150	
Base Capacity (vph)	478	508	2316	1160	315	3047
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.32	0.39	0.31	0.30	0.27

Intersection Summary

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	484	367	304	999	164
v/c Ratio	0.55	0.60	0.19	0.41	0.10
Control Delay	31.3	33.5	0.3	5.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	33.5	0.3	5.5	0.1
Queue Length 50th (ft)	78	85	0	82	0
Queue Length 95th (ft)	109	127	0	139	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	1753	1220	1583	2434	1583
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	0.28	0.30	0.19	0.41	0.10

Intersection Summary

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↑↑↑			↑
Traffic Vol, veh/h	1247	47	0	1946	0	48
Future Vol, veh/h	1247	47	0	1946	0	48
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	1355	51	0	2115	0	52

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	703
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	7.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.92
Pot Cap-1 Maneuver	-	0	326
Stage 1	-	0	-
Stage 2	-	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	326
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

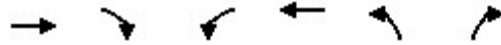
Approach	EB	WB	NB
HCM Control Delay, s	0	0	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	326	-	-	-
HCM Lane V/C Ratio	0.16	-	-	-
HCM Control Delay (s)	18.1	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Queues

9: Stamps Dr & Del Amo Blvd

09-12-2017



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1675	723	343	1186	849	234
v/c Ratio	0.75	0.67	0.67	0.36	0.66	0.40
Control Delay	23.5	5.5	42.3	7.8	32.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	5.5	42.3	7.8	32.6	6.2
Queue Length 50th (ft)	281	12	94	101	152	0
Queue Length 95th (ft)	345	92	138	125	197	55
Internal Link Dist (ft)	1226			1305	991	
Turn Bay Length (ft)			150			
Base Capacity (vph)	2238	1080	579	3355	1282	580
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.67	0.59	0.35	0.66	0.40

Intersection Summary

Queues

13: Main St & Lenardo Dr

09-12-2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	127	221	807	560	113	1214
v/c Ratio	0.52	0.38	0.40	0.49	0.50	0.46
Control Delay	40.3	11.9	11.5	2.8	40.4	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	11.9	11.5	2.8	40.4	4.8
Queue Length 50th (ft)	60	41	110	0	54	94
Queue Length 95th (ft)	113	87	191	50	103	163
Internal Link Dist (ft)	185		509			240
Turn Bay Length (ft)					150	
Base Capacity (vph)	449	656	2007	1140	317	2659
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.34	0.40	0.49	0.36	0.46

Intersection Summary

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	942	552	432	612	260
v/c Ratio	0.62	0.52	0.27	0.31	0.16
Control Delay	23.5	22.7	0.4	9.1	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	22.7	0.4	9.1	0.2
Queue Length 50th (ft)	131	106	0	65	0
Queue Length 95th (ft)	169	150	0	117	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2788	1940	1583	1977	1583
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	0.34	0.28	0.27	0.31	0.16

Intersection Summary

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	2183	142	0	1874	0	20
Future Vol, veh/h	2183	142	0	1874	0	20
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	2373	154	0	2037	0	22

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1264
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	7.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.92
Pot Cap-1 Maneuver	-	0	138
Stage 1	-	0	-
Stage 2	-	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	138
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	35.9
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	138	-	-	-
HCM Lane V/C Ratio	0.158	-	-	-
HCM Control Delay (s)	35.9	-	-	-
HCM Lane LOS	E	-	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-

FUTURE PLUS PROJECT

Queues

9: Stamps Dr & Del Amo Blvd

09-12-2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	997	451	204	1523	427	211	161	27	42	41
v/c Ratio	0.18	0.66	0.57	0.51	0.63	0.47	0.47	0.29	0.23	0.25	0.16
Control Delay	27.4	26.5	5.8	37.7	17.0	26.3	28.7	6.0	37.8	27.9	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.4	26.5	5.8	37.7	17.0	26.3	28.7	6.0	37.8	27.9	1.3
Queue Length 50th (ft)	7	157	0	49	197	98	96	0	13	13	0
Queue Length 95th (ft)	26	212	67	85	263	151	175	44	37	44	0
Internal Link Dist (ft)		481			766		560			185	
Turn Bay Length (ft)	150			150							
Base Capacity (vph)	104	1598	806	436	2549	904	453	560	294	387	458
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	0.62	0.56	0.47	0.60	0.47	0.47	0.29	0.09	0.11	0.09

Intersection Summary

Queues

13: Main St & Lenardo Dr

09-12-2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	59	163	940	360	93	843
v/c Ratio	0.32	0.39	0.40	0.31	0.43	0.28
Control Delay	36.9	13.8	8.4	1.9	37.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	13.8	8.4	1.9	37.7	2.2
Queue Length 50th (ft)	27	30	116	0	43	44
Queue Length 95th (ft)	62	71	194	36	86	74
Internal Link Dist (ft)	185		509			240
Turn Bay Length (ft)					150	
Base Capacity (vph)	449	501	2328	1164	311	3052
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.33	0.40	0.31	0.30	0.28

Intersection Summary

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	491	367	324	1035	165
v/c Ratio	0.58	0.59	0.20	0.43	0.10
Control Delay	32.4	33.5	0.3	5.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	33.5	0.3	5.8	0.1
Queue Length 50th (ft)	81	87	0	90	0
Queue Length 95th (ft)	113	130	0	150	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	1548	1151	1583	2430	1583
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	0.32	0.32	0.20	0.43	0.10

Intersection Summary

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑		↑↑↑			↑
Traffic Vol, veh/h	2287	142	0	1942	0	20
Future Vol, veh/h	2287	142	0	1942	0	20
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	2486	154	0	2111	0	22

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1320
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	7.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.92
Pot Cap-1 Maneuver	-	0	126
Stage 1	-	0	-
Stage 2	-	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	126
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	39.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	126	-	-	-
HCM Lane V/C Ratio	0.173	-	-	-
HCM Control Delay (s)	39.4	-	-	-
HCM Lane LOS	E	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Queues

9: Stamps Dr & Del Amo Blvd

09-12-2017



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	1732	723	343	1254	569	283	234	11	17	16
v/c Ratio	0.56	1.16	0.75	1.06	0.70	0.84	0.83	0.45	0.03	0.05	0.04
Control Delay	63.1	109.5	8.0	107.3	28.1	46.7	56.2	7.4	29.4	16.6	0.2
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	63.1	109.5	8.0	107.3	28.1	46.7	56.2	7.4	29.4	16.6	0.2
Queue Length 50th (ft)	32	~430	5	~111	229	171	170	0	5	1	0
Queue Length 95th (ft)	#85	#525	110	#196	282	#259	#317	59	19	20	0
Internal Link Dist (ft)		1394			2121		560			89	
Turn Bay Length (ft)	150			150							
Base Capacity (vph)	102	1497	967	324	1789	679	340	518	354	321	402
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	0.56	1.16	0.75	1.06	0.70	0.84	0.83	0.45	0.03	0.05	0.04

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: Main St & Lenardo Dr

09-12-2017



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	127	221	841	560	113	1259
v/c Ratio	0.52	0.39	0.42	0.49	0.50	0.47
Control Delay	40.3	12.8	11.7	2.8	40.4	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	12.8	11.7	2.8	40.4	4.9
Queue Length 50th (ft)	60	45	116	0	54	100
Queue Length 95th (ft)	113	92	201	50	103	172
Internal Link Dist (ft)	185		509			240
Turn Bay Length (ft)					150	
Base Capacity (vph)	449	650	2007	1140	317	2659
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.34	0.42	0.49	0.36	0.47

Intersection Summary

Queues

17: Lenardo Dr & I-405 SB Ramps

09-12-2017



Lane Group	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	945	552	451	652	263
v/c Ratio	0.63	0.50	0.28	0.34	0.17
Control Delay	22.7	21.2	0.5	9.8	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	21.2	0.5	9.8	0.2
Queue Length 50th (ft)	127	101	0	72	0
Queue Length 95th (ft)	165	144	0	130	0
Internal Link Dist (ft)	456	442		1084	
Turn Bay Length (ft)				450	
Base Capacity (vph)	2807	2080	1583	1920	1583
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	0.34	0.27	0.28	0.34	0.17

Intersection Summary

Intersection

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑		↑
Traffic Vol, veh/h	1293	47	0	2056	0	48
Future Vol, veh/h	1293	47	0	2056	0	48
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	1405	51	0	2235	0	52

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	728
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	7.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3.92
Pot Cap-1 Maneuver	-	0	314
Stage 1	-	0	-
Stage 2	-	0	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	314
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	314	-	-	-
HCM Lane V/C Ratio	0.166	-	-	-
HCM Control Delay (s)	18.7	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

APPENDIX I:
MODIFIED PROJECT ALTERNATIVE LOS SHEETS

EXISTING PLUS PROJECT - ICU

Project Title: The District
Intersection: 2 - Figueroa St & I-405 NB Off Ramp
Description: Existing with Project Alternative

Thru Lane: 1200 vph
 Left Lane: 1200 vph
 Double Lt Penalty: 20 %
 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): 0.383 *
	TH	2.00	716	2,400	0.298	N-S(2): 0.298
	LT	0.00	0	0	0.000 *	E-W(1): 0.164
Westbound	RT	1.00	292	1,200	0.243 *	E-W(2): 0.243 *
	TH	0.00	0	0	0.000	V/C: 0.626
	LT	1.00	197	1,200	0.164	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	919	2,400	0.383 *	ICU: 0.726
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.321
	TH	2.00	1,704	2,400	0.710 *	N-S(2): 0.710 *
	LT	0.00	0	0	0.000	E-W(1): 0.064
Westbound	RT	1.00	131	1,200	0.109 *	E-W(2): 0.109 *
	TH	0.00	0	0	0.000	V/C: 0.819
	LT	1.00	77	1,200	0.064	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	771	2,400	0.321	ICU: 0.919
	LT	0.00	0	0	0.000 *	LOS: E
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: The District
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.298 *
	TH	2.00	741	3,200	0.231	N-S(2): 0.232
	LT	1.00	88	1,600	0.055 *	E-W(1): 0.067 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.016
	TH	0.00	0	0	0.000	V/C: 0.365
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	68	0	0.000	ITS: 0.000
	TH	2.00	707	1,600	0.243 *	ICU: 0.465
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.10	11	164	0.066	
	TH	0.90	96	1,436	0.067 *	
	LT	1.00	26	1,600	0.016	

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): 0.395 *
	TH	2.00	1,183	3,200	0.370	N-S(2): 0.370
	LT	1.00	226	1,600	0.141 *	E-W(1): 0.426 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.821
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	134	0	0.000	ITS: 0.000
	TH	2.00	677	3,200	0.254 *	ICU: 0.921
	LT	0.00	0	0	0.000	LOS: E
Eastbound	RT	0.07	45	106	0.426	
	TH	0.93	636	1,494	0.426 *	
	LT	1.00	17	1,600	0.011	

* - Denotes critical movement

Project Title: The District
Intersection: 4 - S Main St & I-405 NB Off Ramp
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	83	0	0.000	N-S(1): 0.223
	TH	2.00	715	3,200	0.249 *	N-S(2): 0.267 *
	LT	0.00	0	0	0.000	E-W(1): 0.052
Westbound	RT	0.00	190	0	0.000	E-W(2): 0.203 *
	TH	2.00	377	1,600	0.203 *	V/C: 0.470
	LT	0.00	84	1,600	0.052	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	712	3,200	0.223	ICU: 0.570
	LT	1.00	29	1,600	0.018 *	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	60	0	0.000	N-S(1): 0.215
	TH	2.00	1,317	1,600	0.431 *	N-S(2): 0.446 *
	LT	0.00	1	1,600	0.001	E-W(1): 0.048
Westbound	RT	0.00	235	1,600	0.147 *	E-W(2): 0.147 *
	TH	2.00	120	1,600	0.075	V/C: 0.593
	LT	0.00	76	1,600	0.048	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	684	3,200	0.214	ICU: 0.693
	LT	1.00	24	1,600	0.015 *	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: The District
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1): 0.405 *
	TH	2.00	263	3,200	0.082	N-S(2): 0.100
	LT	1.00	141	1,600	0.088 *	E-W(1): 0.286 *
Westbound	RT	1.00	416	1,600	0.216	E-W(2): 0.255
	TH	1.00	229	1,600	0.143	V/C: 0.691
	LT	1.00	385	1,600	0.241 *	Lost Time: 0.100
Northbound	RT	0.00	268	0	0.000	ITS: 0.000
	TH	2.00	746	3,200	0.317 *	ICU: 0.791
	LT	1.00	28	1,600	0.018	LOS: C
Eastbound	RT	0.00	16	0	0.000	
	TH	2.00	130	3,200	0.045 *	
	LT	1.00	62	1,600	0.039	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	84	1,600	0.044	N-S(1): 0.507 *
	TH	2.00	952	3,200	0.298	N-S(2): 0.301
	LT	1.00	449	1,600	0.281 *	E-W(1): 0.294 *
Westbound	RT	1.00	228	1,600	0.002	E-W(2): 0.139
	TH	1.00	194	1,600	0.121	V/C: 0.801
	LT	1.00	376	1,600	0.235 *	Lost Time: 0.100
Northbound	RT	0.00	209	0	0.000	ITS: 0.000
	TH	2.00	513	3,200	0.226 *	ICU: 0.901
	LT	1.00	4	1,600	0.003	LOS: E
Eastbound	RT	0.00	14	0	0.000	
	TH	2.00	173	3,200	0.059 *	
	LT	1.00	28	1,600	0.018	

* - Denotes critical movement

Project Title: The District
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	437	1,600	0.228 *	N-S(1):	0.265
	TH	2.00	378	3,200	0.118	N-S(2):	0.351 *
	LT	1.00	65	1,600	0.040	E-W(1):	0.443 *
Westbound	RT	1.00	179	1,600	0.092	E-W(2):	0.435
	TH	2.00	1,100	3,200	0.344	V/C:	0.794
	LT	1.00	392	1,600	0.245 *	Lost Time:	0.100
Northbound	RT	1.00	358	1,600	0.101	ITS:	0.000
	TH	2.00	721	3,200	0.225	ICU:	0.894
	LT	1.00	196	1,600	0.123 *	LOS:	D
Eastbound	RT	1.00	98	1,600	0.000		
	TH	2.00	635	3,200	0.198 *		
	LT	1.00	146	1,600	0.091		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	226	1,600	0.123	N-S(1):	0.278 *
	TH	2.00	576	3,200	0.180	N-S(2):	0.213
	LT	1.00	224	1,600	0.140 *	E-W(1):	0.753 *
Westbound	RT	1.00	141	1,600	0.018	E-W(2):	0.315
	TH	2.00	894	3,200	0.279	V/C:	1.031
	LT	1.00	561	1,600	0.351 *	Lost Time:	0.100
Northbound	RT	1.00	419	1,600	0.087	ITS:	0.000
	TH	2.00	442	3,200	0.138 *	ICU:	1.131
	LT	1.00	53	1,600	0.033	LOS:	F
Eastbound	RT	1.00	164	1,600	0.086		
	TH	2.00	1,286	3,200	0.402 *		
	LT	1.00	58	1,600	0.036		

* - Denotes critical movement

Project Title: The District
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	126	0	0.000	N-S(1): 0.301 *
	TH	2.00	523	3,200	0.203	N-S(2): 0.278
	LT	1.00	74	1,600	0.046 *	E-W(1): 0.330
Westbound	RT	0.00	73	0	0.000	E-W(2): 0.412 *
	TH	3.00	1,479	4,800	0.323 *	V/C: 0.713
	LT	1.00	229	1,600	0.143	Lost Time: 0.100
Northbound	RT	0.00	240	0	0.000	ITS: 0.000
	TH	2.00	577	3,200	0.255 *	ICU: 0.813
	LT	1.00	120	1,600	0.075	LOS: D
Eastbound	RT	0.00	38	0	0.000	
	TH	3.00	859	4,800	0.187	
	LT	1.00	142	1,600	0.089 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	151	0	0.000	N-S(1): 0.357
	TH	2.00	809	3,200	0.300 *	N-S(2): 0.361 *
	LT	1.00	183	1,600	0.114	E-W(1): 0.519 *
Westbound	RT	0.00	74	0	0.000	E-W(2): 0.399
	TH	3.00	1,347	4,800	0.296	V/C: 0.880
	LT	1.00	246	1,600	0.154 *	Lost Time: 0.100
Northbound	RT	0.00	295	0	0.000	ITS: 0.000
	TH	2.00	483	3,200	0.243	ICU: 0.980
	LT	1.00	97	1,600	0.061 *	LOS: E
Eastbound	RT	0.00	116	0	0.000	
	TH	3.00	1,634	4,800	0.365 *	
	LT	1.00	164	1,600	0.103	

* - Denotes critical movement

Project Title: The District
Intersection: 9 - Stamps Dr & Del Amo Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 ITS: 0 %
 OLA Movements : NBR,
 FF Movements:

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

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	0	0	0.000	N-S(1): 0.014
	TH	0.00	0	0	0.000 *	N-S(2): 0.116 *
	LT	0.00	0	0	0.000	E-W(1): 0.255
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.282 *
	TH	3.00	1,352	4,800	0.282 *	V/C: 0.398
	LT	2.00	144	2,560	0.056	Lost Time: 0.100
Northbound	RT	1.00	113	1,600	0.014	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.498
	LT	3.00	444	3,840	0.116 *	LOS: A
Eastbound	RT	1.00	318	1,600	0.199	
	TH	3.00	876	4,800	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): 0.010
	TH	0.00	0	0	0.000 *	N-S(2): 0.158 *
	LT	0.00	0	0	0.000	E-W(1): 0.418 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.227
	TH	3.00	1,091	4,800	0.227	V/C: 0.576
	LT	2.00	243	2,560	0.095 *	Lost Time: 0.100
Northbound	RT	1.00	168	1,600	0.010	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.676
	LT	3.00	607	3,840	0.158 *	LOS: B
Eastbound	RT	1.00	518	1,600	0.323 *	
	TH	3.00	1,536	4,800	0.320	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: The District
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	250	0	0.000	N-S(1):	0.250
	TH	3.00	588	4,800	0.175 *	N-S(2):	0.352 *
	LT	2.00	166	2,560	0.065	E-W(1):	0.293
Westbound	RT	1.00	98	1,600	0.029	E-W(2):	0.454 *
	TH	2.00	864	3,200	0.270 *	V/C:	0.806
	LT	1.00	175	1,600	0.109	Lost Time:	0.100
Northbound	RT	1.00	135	1,600	0.030	ITS:	0.000
	TH	3.00	886	4,800	0.185	ICU:	0.906
	LT	1.00	284	1,600	0.177 *	LOS:	E
Eastbound	RT	1.00	116	1,600	0.000		
	TH	2.00	589	3,200	0.184		
	LT	1.00	294	1,600	0.184 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	316	0	0.000	N-S(1):	0.328
	TH	3.00	885	4,800	0.250 *	N-S(2):	0.403 *
	LT	2.00	337	2,560	0.132	E-W(1):	0.466 *
Westbound	RT	1.00	143	1,600	0.024	E-W(2):	0.385
	TH	2.00	727	3,200	0.227	V/C:	0.869
	LT	1.00	253	1,600	0.158 *	Lost Time:	0.100
Northbound	RT	1.00	204	1,600	0.048	ITS:	0.000
	TH	3.00	941	4,800	0.196	ICU:	0.969
	LT	1.00	245	1,600	0.153 *	LOS:	E
Eastbound	RT	1.00	260	1,600	0.086		
	TH	2.00	987	3,200	0.308 *		
	LT	1.00	253	1,600	0.158		

* - Denotes critical movement

Project Title: The District
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	374	1,600	0.233 *	N-S(1): 0.215
	TH	2.00	485	3,200	0.152	N-S(2): 0.488 *
	LT	0.00	0	0	0.000	E-W(1): 0.165
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.366 *
	TH	0.00	0	0	0.000 *	V/C: 0.854
	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	688	3,200	0.215	ICU: 0.954
	LT	2.00	653	2,560	0.255 *	LOS: E
Eastbound	RT	0.71	334	1,142	0.165	
	TH	0.00	0	0	0.000	
	LT	1.29	603	1,647	0.366 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	559	1,600	0.349 *	N-S(1): 0.142
	TH	3.00	760	4,800	0.158	N-S(2): 0.594 *
	LT	0.00	0	0	0.000	E-W(1): 0.078
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.251 *
	TH	0.00	0	0	0.000 *	V/C: 0.845
	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	453	3,200	0.142	ICU: 0.945
	LT	2.00	627	2,560	0.245 *	LOS: E
Eastbound	RT	0.71	228	1,137	0.078	
	TH	0.00	0	0	0.000	
	LT	1.29	414	1,650	0.251 *	

* - Denotes critical movement

Project Title: The District
Intersection: 13 - Main St & Lenardo Dr
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.302 *
	TH	2.00	740	3,200	0.231	N-S(2): 0.231
	LT	1.00	65	1,600	0.041 *	E-W(1): 0.026
Westbound	RT	1.00	113	1,600	0.050 *	E-W(2): 0.050 *
	TH	0.00	0	0	0.000	V/C: 0.352
	LT	1.00	42	1,600	0.026	Lost Time: 0.100
Northbound	RT	1.00	253	1,600	0.158	ITS: 0.000
	TH	2.00	834	3,200	0.261 *	ICU: 0.452
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.299
	TH	2.00	1,115	3,200	0.349 *	N-S(2): 0.349 *
	LT	1.00	80	1,600	0.050	E-W(1): 0.057
Westbound	RT	1.00	157	1,600	0.073 *	E-W(2): 0.073 *
	TH	0.00	0	0	0.000	V/C: 0.422
	LT	1.00	92	1,600	0.057	Lost Time: 0.100
Northbound	RT	1.00	399	1,600	0.249	ITS: 0.000
	TH	2.00	742	3,200	0.232	ICU: 0.522
	LT	0.00	0	0	0.000 *	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: The District
Intersection: 14 - Hamilton Ave & W Torrance Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.50	572	2,393	0.209	N-S(1): 0.239 * N-S(2): 0.209 E-W(1): 0.331 E-W(2): 0.404 *
	TH	0.00	0	0	0.000	
	LT	0.50	193	807	0.239 *	
Westbound	RT	0.00	98	0	0.000	V/C: 0.643 Lost Time: 0.100 ITS: 0.000
	TH	2.00	1,001	3,200	0.343 *	
	LT	0.00	0	0	0.000	
Northbound	RT	0.00	0	0	0.000	ICU: 0.743
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	LOS: C
	TH	2.00	1,059	3,200	0.331	
	LT	1.00	97	1,600	0.061 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.14	242	1,822	0.069	N-S(1): 0.133 * N-S(2): 0.069 E-W(1): 0.415 * E-W(2): 0.408
	TH	0.00	0	0	0.000	
	LT	0.86	183	1,378	0.133 *	
Westbound	RT	0.00	270	0	0.000	V/C: 0.548 Lost Time: 0.100 ITS: 0.000
	TH	2.00	626	3,200	0.280	
	LT	0.00	0	0	0.000 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.648
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	LOS: B
	TH	2.00	1,329	3,200	0.415 *	
	LT	1.00	204	1,600	0.128	

* - Denotes critical movement

Project Title: The District
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	426	1,600	0.103	N-S(1):	0.258 *
	TH	2.00	335	3,200	0.105	N-S(2):	0.217
	LT	1.00	79	1,600	0.050 *	E-W(1):	0.482 *
Westbound	RT	1.00	151	1,600	0.070	E-W(2):	0.000
	TH	2.00	495	3,200	0.155 *	V/C:	0.740
	LT	1.00	62	1,600	0.039	Lost Time:	0.100
Northbound	RT	0.00	76	0	0.000	ITS:	0.000
	TH	2.00	588	3,200	0.208 *	ICU:	0.840
	LT	1.00	179	1,600	0.112	LOS:	D
Eastbound	RT	0.00	159	0	0.000		
	TH	1.57	495	2,504	0.261		
	LT	1.43	600	1,837	0.327 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	370	1,600	0.034	N-S(1):	0.221 *
	TH	2.00	457	3,200	0.143	N-S(2):	0.196
	LT	1.00	154	1,600	0.096 *	E-W(1):	0.532 *
Westbound	RT	1.00	161	1,600	0.052	E-W(2):	0.000
	TH	2.00	438	3,200	0.137 *	V/C:	0.753
	LT	1.00	49	1,600	0.031	Lost Time:	0.100
Northbound	RT	0.00	70	0	0.000	ITS:	0.000
	TH	2.00	330	3,200	0.125 *	ICU:	0.853
	LT	1.00	85	1,600	0.053	LOS:	D
Eastbound	RT	0.00	158	0	0.000		
	TH	1.81	761	2,903	0.316		
	LT	1.19	600	1,517	0.395 *		

* - Denotes critical movement

Project Title: The District
Intersection: 16 - S Main St & W Torrance Blvd
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	286	1,600	0.064	N-S(1):	0.241
	TH	2.00	467	3,200	0.146 *	N-S(2):	0.287 *
	LT	1.00	12	1,600	0.008	E-W(1):	0.304 *
Westbound	RT	0.00	35	0	0.000	E-W(2):	0.000
	TH	1.00	75	1,600	0.075 *	V/C:	0.591
	LT	0.00	10	1,600	0.006	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	737	3,200	0.233	ICU:	0.691
	LT	2.00	361	2,560	0.141 *	LOS:	B
Eastbound	RT	1.00	226	1,600	0.071		
	TH	0.06	23	100	0.229		
	LT	0.94	343	1,500	0.229 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	364	1,600	0.073	N-S(1):	0.242
	TH	2.00	762	3,200	0.238 *	N-S(2):	0.346 *
	LT	1.00	45	1,600	0.028	E-W(1):	0.356 *
Westbound	RT	0.00	25	0	0.000	E-W(2):	0.000
	TH	1.00	43	1,600	0.049 *	V/C:	0.702
	LT	0.00	11	1,600	0.007	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	677	3,200	0.214	ICU:	0.802
	LT	2.00	276	2,560	0.108 *	LOS:	D
Eastbound	RT	1.00	500	1,600	0.259		
	TH	0.14	70	228	0.307		
	LT	0.86	422	1,372	0.307 *		

* - Denotes critical movement

Project Title: The District
Intersection: 17 - Lenardo Dr & I-405 SB Ramps
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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, WBR

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	116	1,600	0.000	N-S(1): 0.359 * N-S(2): 0.000 E-W(1): 0.071 E-W(2): 0.081 *
	TH	0.00	0	0	0.000	
	LT	2.00	919	2,560	0.359 *	
Westbound	RT	1.00	271	1,600	0.000	V/C: 0.440 Lost Time: 0.100 ITS: 0.000
	TH	2.00	258	3,200	0.081 *	
	LT	0.00	0	0	0.000	
Northbound	RT	0.00	0	0	0.000	ICU: 0.540
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	LOS: A
	TH	3.00	340	4,800	0.071	
	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	186	1,600	0.000	N-S(1): 0.220 * N-S(2): 0.000 E-W(1): 0.141 * E-W(2): 0.123
	TH	0.00	0	0	0.000	
	LT	2.00	563	2,560	0.220 *	
Westbound	RT	1.00	393	1,600	0.000	V/C: 0.361 Lost Time: 0.100 ITS: 0.000
	TH	2.00	394	3,200	0.123	
	LT	0.00	0	0	0.000 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.461
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	
Eastbound	RT	0.00	0	0	0.000	LOS: A
	TH	3.00	678	4,800	0.141 *	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: The District
Intersection: 18 - S Avalon Blvd & I-405 SB Ramps
Description: Existing with Project Alternative

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, EBR,		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	416	1,600	0.000	N-S(1): 0.356 *
	TH	2.00	700	3,200	0.219	N-S(2): 0.290
	LT	0.00	0	0	0.000 *	E-W(1): 0.036
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.214 *
	TH	0.00	0	0	0.000 *	V/C: 0.570
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	121	0	0.000	ITS: 0.000
	TH	2.00	1,017	3,200	0.356 *	ICU: 0.670
	LT	1.00	113	1,600	0.071	LOS: B
Eastbound	RT	1.00	594	1,600	0.000	
	TH	2.00	115	3,200	0.036	
	LT	2.00	549	2,560	0.214 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	645	1,600	0.000	N-S(1): 0.423 *
	TH	2.00	943	3,200	0.295	N-S(2): 0.384
	LT	0.00	0	0	0.000 *	E-W(1): 0.116
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.141 *
	TH	0.00	0	0	0.000 *	V/C: 0.564
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	189	0	0.000	ITS: 0.000
	TH	2.00	1,166	3,200	0.423 *	ICU: 0.664
	LT	1.00	143	1,600	0.089	LOS: B
Eastbound	RT	1.00	510	1,600	0.000	
	TH	2.00	370	3,200	0.116	
	LT	2.00	360	2,560	0.141 *	

* - Denotes critical movement

Project Title: The District
Intersection: 19 - S Avalon Blvd & I-405 NB Ramps
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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: WBR

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	222	1,600	0.139	N-S(1): 0.372 * N-S(2): 0.333 E-W(1): 0.087 * E-W(2): 0.070
	TH	3.00	839	4,800	0.175	
	LT	0.00	0	0	0.000 *	
Westbound	RT	1.00	561	1,600	0.000	V/C: 0.459 Lost Time: 0.100 ITS: 0.000
	TH	0.02	2	29	0.070	
	LT	1.98	221	2,537	0.087 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.559
	TH	2.00	1,192	3,200	0.372 *	
	LT	2.00	404	2,560	0.158	
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	1.00	506	1,600	0.316 *	N-S(1): 0.298 N-S(2): 0.527 * E-W(1): 0.124 * E-W(2): 0.000
	TH	3.00	1,249	4,800	0.260	
	LT	0.00	0	0	0.000	
Westbound	RT	1.00	430	1,600	0.000	V/C: 0.651 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	318	2,560	0.124 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.751
	TH	2.00	953	3,200	0.298	
	LT	2.00	541	2,560	0.211 *	
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: The District
Intersection: 20 - S Main St & E 213th St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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 * N-S(2): 0.173 E-W(1): 0.372 * E-W(2): 0.335
	TH	2.00	544	3,200	0.170	
	LT	1.00	119	1,600	0.074 *	
Westbound	RT	0.51	303	815	0.335	V/C: 0.753 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	0.49	292	785	0.372 *	
Northbound	RT	0.00	161	0	0.000	ICU: 0.853
	TH	2.00	816	1,600	0.307 *	
	LT	0.00	4	1,600	0.003	
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	0	0	0.000	N-S(1): 0.538 * N-S(2): 0.278 E-W(1): 0.246 * E-W(2): 0.133
	TH	2.00	880	3,200	0.275	
	LT	1.00	360	1,600	0.225 *	
Westbound	RT	0.42	165	672	0.133	V/C: 0.784 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	0.58	228	928	0.246 *	
Northbound	RT	0.00	263	0	0.000	ICU: 0.884
	TH	2.00	735	1,600	0.313 *	
	LT	0.00	5	1,600	0.003	
Eastbound	RT	0.00	0	0	0.000	LOS: D
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	

* - Denotes critical movement

Project Title: The District
Intersection: 21 - S Avalon Blvd & E 213th St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	173	0	0.000	N-S(1):	0.264
	TH	3.00	1,004	4,800	0.245 *	N-S(2):	0.311 *
	LT	1.00	76	1,600	0.048	E-W(1):	0.256 *
Westbound	RT	0.00	89	0	0.000	E-W(2):	0.249
	TH	2.00	236	3,200	0.101	V/C:	0.567
	LT	1.00	123	1,600	0.077 *	Lost Time:	0.100
Northbound	RT	0.00	135	0	0.000	ITS:	0.000
	TH	3.00	904	4,800	0.216	ICU:	0.667
	LT	1.00	105	1,600	0.066 *	LOS:	B
Eastbound	RT	0.30	85	476	0.146		
	TH	0.70	201	1,124	0.179 *		
	LT	1.00	237	1,600	0.148		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	183	0	0.000	N-S(1):	0.325
	TH	3.00	1,110	4,800	0.269 *	N-S(2):	0.359 *
	LT	1.00	114	1,600	0.071	E-W(1):	0.329 *
Westbound	RT	0.00	101	0	0.000	E-W(2):	0.255
	TH	2.00	205	3,200	0.096	V/C:	0.688
	LT	1.00	122	1,600	0.076 *	Lost Time:	0.100
Northbound	RT	0.00	126	0	0.000	ITS:	0.000
	TH	3.00	1,093	4,800	0.254	ICU:	0.788
	LT	1.00	144	1,600	0.090 *	LOS:	C
Eastbound	RT	0.27	110	435	0.208		
	TH	0.73	295	1,165	0.253 *		
	LT	1.00	255	1,600	0.159		

* - Denotes critical movement

Project Title: The District
Intersection: 22 - S Vermont Ave & W Carson St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	223	1,600	0.095	N-S(1): 0.322 *
	TH	2.00	423	3,200	0.132	N-S(2): 0.254
	LT	1.00	112	1,600	0.070 *	E-W(1): 0.430
Westbound	RT	1.00	125	1,600	0.043	E-W(2): 0.473 *
	TH	2.00	1,229	3,200	0.384 *	V/C: 0.795
	LT	1.00	318	1,600	0.199	Lost Time: 0.100
Northbound	RT	1.00	168	1,600	0.006	ITS: 0.000
	TH	2.00	807	3,200	0.252 *	ICU: 0.895
	LT	1.00	195	1,600	0.122	LOS: D
Eastbound	RT	1.00	88	1,600	0.000	
	TH	2.00	739	3,200	0.231	
	LT	1.00	143	1,600	0.089 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	260	1,600	0.114	N-S(1): 0.269
	TH	2.00	732	3,200	0.229 *	N-S(2): 0.303 *
	LT	1.00	208	1,600	0.130	E-W(1): 0.379 *
Westbound	RT	1.00	94	1,600	0.000	E-W(2): 0.359
	TH	2.00	843	3,200	0.263	V/C: 0.682
	LT	1.00	114	1,600	0.071 *	Lost Time: 0.100
Northbound	RT	1.00	204	1,600	0.092	ITS: 0.000
	TH	2.00	446	3,200	0.139	ICU: 0.782
	LT	1.00	118	1,600	0.074 *	LOS: C
Eastbound	RT	1.00	210	1,600	0.094	
	TH	2.00	987	3,200	0.308 *	
	LT	1.00	154	1,600	0.096	

* - Denotes critical movement

Project Title: The District
Intersection: 23 - Figueroa St & W Carson St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	311	0	0.000	N-S(1): 0.242
	TH	2.00	380	3,200	0.216 *	N-S(2): 0.350 *
	LT	1.00	44	1,600	0.028	E-W(1): 0.547 *
Westbound	RT	0.00	46	0	0.000	E-W(2): 0.241
	TH	2.00	437	3,200	0.151	V/C: 0.897
	LT	1.00	39	1,600	0.025 *	Lost Time: 0.100
Northbound	RT	0.00	148	0	0.000	ITS: 0.000
	TH	2.00	535	3,200	0.214	ICU: 0.997
	LT	2.00	344	2,560	0.134 *	LOS: E
Eastbound	RT	0.52	435	833	0.455	
	TH	0.48	400	767	0.522 *	
	LT	1.00	144	1,600	0.090	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	177	0	0.000	N-S(1): 0.208
	TH	2.00	442	3,200	0.193 *	N-S(2): 0.282 *
	LT	1.00	88	1,600	0.055	E-W(1): 0.766 *
Westbound	RT	0.00	33	0	0.000	E-W(2): 0.228
	TH	2.00	445	3,200	0.149	V/C: 1.048
	LT	1.00	68	1,600	0.043 *	Lost Time: 0.100
Northbound	RT	0.00	126	0	0.000	ITS: 0.000
	TH	2.00	362	3,200	0.153	ICU: 1.148
	LT	2.00	229	2,560	0.089 *	LOS: F
Eastbound	RT	0.43	500	692	0.678	
	TH	0.57	656	908	0.723 *	
	LT	1.00	127	1,600	0.079	

* - Denotes critical movement

Project Title: The District
Intersection: 24 - S Main St & W Carson St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	76	0	0.000	N-S(1): 0.222 *
	TH	3.00	531	4,800	0.126	N-S(2): 0.208
	LT	1.00	53	1,600	0.033 *	E-W(1): 0.156
Westbound	RT	1.00	56	1,600	0.018	E-W(2): 0.204 *
	TH	2.00	327	3,200	0.102 *	V/C: 0.426
	LT	1.00	89	1,600	0.055	Lost Time: 0.100
Northbound	RT	0.00	114	0	0.000	ITS: 0.000
	TH	3.00	793	4,800	0.189 *	ICU: 0.526
	LT	1.00	131	1,600	0.082	LOS: A
Eastbound	RT	1.00	99	1,600	0.021	
	TH	2.00	324	3,200	0.101	
	LT	1.00	163	1,600	0.102 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	108	0	0.000	N-S(1): 0.253
	TH	3.00	773	4,800	0.184 *	N-S(2): 0.282 *
	LT	1.00	159	1,600	0.099	E-W(1): 0.254
Westbound	RT	1.00	51	1,600	0.000	E-W(2): 0.269 *
	TH	2.00	384	3,200	0.120 *	V/C: 0.551
	LT	1.00	165	1,600	0.103	Lost Time: 0.100
Northbound	RT	0.00	97	0	0.000	ITS: 0.000
	TH	3.00	645	4,800	0.154	ICU: 0.651
	LT	1.00	156	1,600	0.098 *	LOS: B
Eastbound	RT	1.00	42	1,600	0.000	
	TH	2.00	482	3,200	0.151	
	LT	1.00	238	1,600	0.149 *	

* - Denotes critical movement

Project Title: The District
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	106	0	0.000	N-S(1):	0.434 *
	TH	3.00	756	4,800	0.180	N-S(2):	0.218
	LT	1.00	192	1,600	0.120 *	E-W(1):	0.313
Westbound	RT	0.33	155	525	0.236	E-W(2):	0.341 *
	TH	0.67	318	1,075	0.296 *	V/C:	0.775
	LT	2.00	383	2,560	0.150	Lost Time:	0.100
Northbound	RT	0.00	503	1,600	0.314 *	ITS:	0.000
	TH	3.00	750	3,200	0.235	ICU:	0.875
	LT	1.00	60	1,600	0.038	LOS:	D
Eastbound	RT	0.00	65	0	0.000		
	TH	2.00	457	3,200	0.163		
	LT	2.00	115	2,560	0.045 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	221	0	0.000	N-S(1):	0.470 *
	TH	3.00	805	4,800	0.214	N-S(2):	0.261
	LT	1.00	288	1,600	0.180 *	E-W(1):	0.364
Westbound	RT	0.34	179	536	0.245	E-W(2):	0.400 *
	TH	0.66	356	1,064	0.335 *	V/C:	0.870
	LT	2.00	380	2,560	0.148	Lost Time:	0.100
Northbound	RT	0.00	464	1,600	0.290 *	ITS:	0.000
	TH	3.00	786	3,200	0.246	ICU:	0.970
	LT	1.00	75	1,600	0.047	LOS:	E
Eastbound	RT	0.00	71	0	0.000		
	TH	2.00	621	3,200	0.216		
	LT	2.00	166	2,560	0.065 *		

* - Denotes critical movement

Project Title: The District
Intersection: 26 - SR 405 SB Ramps & E Carson St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	10	0	0.000	N-S(1): 0.101 *
	TH	0.00	0	0	0.000	N-S(2): 0.059
	LT	0.00	0	0	0.000 *	E-W(1): 0.420 *
Westbound	RT	0.00	19	0	0.000	E-W(2): 0.236
	TH	3.00	1,094	4,800	0.232	V/C: 0.521
	LT	1.00	108	1,600	0.068 *	Lost Time: 0.100
Northbound	RT	1.00	216	1,600	0.101 *	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	95	1,600	0.059	
Eastbound	RT	1.00	610	1,600	0.352 *	ICU: 0.621
	TH	2.00	628	3,200	0.196	
	LT	1.00	7	1,600	0.004	LOS: B

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	7	0	0.000	N-S(1): 0.001
	TH	0.00	0	0	0.000 *	N-S(2): 0.019 *
	LT	0.00	0	0	0.000	E-W(1): 0.548 *
Westbound	RT	0.00	21	0	0.000	E-W(2): 0.228
	TH	3.00	1,032	4,800	0.219	V/C: 0.567
	LT	1.00	106	1,600	0.066 *	Lost Time: 0.100
Northbound	RT	1.00	55	1,600	0.001	ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	31	1,600	0.019 *	
Eastbound	RT	1.00	786	1,600	0.482 *	ICU: 0.667
	TH	2.00	1,082	3,200	0.338	
	LT	1.00	15	1,600	0.009	LOS: B

* - Denotes critical movement

Project Title: The District
Intersection: 27 - SR 405 NB Ramps & E Carson St
Description: Existing with Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	422	1,600	0.000	N-S(1):	0.030 *
	TH	0.42	15	667	0.023 *	N-S(2):	0.030 *
	LT	0.58	21	933	0.023 *	E-W(1):	0.245
Westbound	RT	1.00	245	1,600	0.142	E-W(2):	0.305 *
	TH	2.00	810	3,200	0.253 *	V/C:	0.335
	LT	1.00	14	1,600	0.009	Lost Time:	0.100
Northbound	RT	1.00	4	1,600	0.000	ITS:	0.000
	TH	0.36	4	582	0.007 *	ICU:	0.435
	LT	0.64	7	1,018	0.007 *	LOS:	A
Eastbound	RT	0.00	39	0	0.000		
	TH	2.00	716	3,200	0.236		
	LT	1.00	83	1,600	0.052 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	398	1,600	0.000	N-S(1):	0.063 *
	TH	0.17	8	278	0.029 *	N-S(2):	0.063 *
	LT	0.83	38	1,322	0.029 *	E-W(1):	0.335 *
Westbound	RT	1.00	379	1,600	0.223	E-W(2):	0.302
	TH	2.00	730	3,200	0.228	V/C:	0.398
	LT	1.00	23	1,600	0.014 *	Lost Time:	0.100
Northbound	RT	1.00	20	1,600	0.005	ITS:	0.000
	TH	0.36	20	582	0.034 *	ICU:	0.498
	LT	0.64	35	1,018	0.034 *	LOS:	A
Eastbound	RT	0.00	35	0	0.000		
	TH	2.00	993	3,200	0.321 *		
	LT	1.00	118	1,600	0.074		

* - Denotes critical movement

FUTURE PLUS PROJECT - ICU

Project Title: The District
Intersection: 2 - Figueroa St & I-405 NB Off Ramp
Description: Cumulative Base plus Project Alternative

Thru Lane: 1200 vph
 Left Lane: 1200 vph
 Double Lt Penalty: 20 %
 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): 0.395 *
	TH	2.00	737	2,400	0.307	N-S(2): 0.307
	LT	0.00	0	0	0.000 *	E-W(1): 0.169
Westbound	RT	1.00	301	1,200	0.251 *	E-W(2): 0.251 *
	TH	0.00	0	0	0.000	V/C: 0.646
	LT	1.00	203	1,200	0.169	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	948	2,400	0.395 *	ICU: 0.746
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.331
	TH	2.00	1,757	2,400	0.732 *	N-S(2): 0.732 *
	LT	0.00	0	0	0.000	E-W(1): 0.066
Westbound	RT	1.00	135	1,200	0.113 *	E-W(2): 0.113 *
	TH	0.00	0	0	0.000	V/C: 0.845
	LT	1.00	79	1,200	0.066	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	795	2,400	0.331	ICU: 0.945
	LT	0.00	0	0	0.000 *	LOS: E
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: The District
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.310 *
	TH	2.00	764	3,200	0.239	N-S(2): 0.240
	LT	1.00	91	1,600	0.057 *	E-W(1): 0.069 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.017
	TH	0.00	0	0	0.000	V/C: 0.379
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	74	0	0.000	ITS: 0.000
	TH	2.00	734	1,600	0.253 *	ICU: 0.479
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.10	11	160	0.068	
	TH	0.90	99	1,440	0.069 *	
	LT	1.00	27	1,600	0.017	

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): 0.408 *
	TH	2.00	1,226	3,200	0.383	N-S(2): 0.383
	LT	1.00	234	1,600	0.146 *	E-W(1): 0.438 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.846
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	140	0	0.000	ITS: 0.000
	TH	2.00	698	3,200	0.262 *	ICU: 0.946
	LT	0.00	0	0	0.000	LOS: E
Eastbound	RT	0.07	46	105	0.438	
	TH	0.93	655	1,495	0.438 *	
	LT	1.00	18	1,600	0.011	

* - Denotes critical movement

Project Title: The District
Intersection: 4 - S Main St & I-405 NB Off Ramp
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	86	0	0.000	N-S(1): 0.231
	TH	2.00	737	3,200	0.257 *	N-S(2): 0.276 *
	LT	0.00	0	0	0.000	E-W(1): 0.054
Westbound	RT	0.00	197	0	0.000	E-W(2): 0.210 *
	TH	2.00	388	1,600	0.210 *	V/C: 0.486
	LT	0.00	87	1,600	0.054	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	739	3,200	0.231	ICU: 0.586
	LT	1.00	30	1,600	0.019 *	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	62	0	0.000	N-S(1): 0.221
	TH	2.00	1,361	1,600	0.445 *	N-S(2): 0.461 *
	LT	0.00	1	1,600	0.001	E-W(1): 0.051
Westbound	RT	0.00	242	1,600	0.151 *	E-W(2): 0.151 *
	TH	2.00	124	1,600	0.078	V/C: 0.612
	LT	0.00	81	1,600	0.051	Lost Time: 0.100
Northbound	RT	0.00	0	0	0.000	ITS: 0.000
	TH	2.00	705	3,200	0.220	ICU: 0.712
	LT	1.00	25	1,600	0.016 *	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: The District
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1): 0.423 *
	TH	2.00	275	3,200	0.086	N-S(2): 0.104
	LT	1.00	146	1,600	0.091 *	E-W(1): 0.295 *
Westbound	RT	1.00	430	1,600	0.223	E-W(2): 0.263
	TH	1.00	236	1,600	0.148	V/C: 0.718
	LT	1.00	398	1,600	0.249 *	Lost Time: 0.100
Northbound	RT	0.00	277	0	0.000	ITS: 0.000
	TH	2.00	786	3,200	0.332 *	ICU: 0.818
	LT	1.00	29	1,600	0.018	LOS: D
Eastbound	RT	0.00	16	0	0.000	
	TH	2.00	133	3,200	0.046 *	
	LT	1.00	64	1,600	0.040	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	87	1,600	0.045	N-S(1): 0.528 *
	TH	2.00	1,001	3,200	0.313	N-S(2): 0.316
	LT	1.00	464	1,600	0.290 *	E-W(1): 0.302 *
Westbound	RT	1.00	235	1,600	0.002	E-W(2): 0.142
	TH	1.00	199	1,600	0.124	V/C: 0.830
	LT	1.00	388	1,600	0.242 *	Lost Time: 0.100
Northbound	RT	0.00	217	0	0.000	ITS: 0.000
	TH	2.00	544	3,200	0.238 *	ICU: 0.930
	LT	1.00	4	1,600	0.003	LOS: E
Eastbound	RT	0.00	14	0	0.000	
	TH	2.00	178	3,200	0.060 *	
	LT	1.00	29	1,600	0.018	

* - Denotes critical movement

Project Title: The District
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	450	1,600	0.234 *	N-S(1):	0.274
	TH	2.00	389	3,200	0.122	N-S(2):	0.360 *
	LT	1.00	66	1,600	0.041	E-W(1):	0.481 *
Westbound	RT	1.00	185	1,600	0.095	E-W(2):	0.451
	TH	2.00	1,143	3,200	0.357	V/C:	0.841
	LT	1.00	440	1,600	0.275 *	Lost Time:	0.100
Northbound	RT	1.00	374	1,600	0.096	ITS:	0.000
	TH	2.00	744	3,200	0.233	ICU:	0.941
	LT	1.00	202	1,600	0.126 *	LOS:	E
Eastbound	RT	1.00	101	1,600	0.000		
	TH	2.00	658	3,200	0.206 *		
	LT	1.00	150	1,600	0.094		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	233	1,600	0.127	N-S(1):	0.287 *
	TH	2.00	594	3,200	0.186	N-S(2):	0.220
	LT	1.00	231	1,600	0.145 *	E-W(1):	0.786 *
Westbound	RT	1.00	145	1,600	0.018	E-W(2):	0.327
	TH	2.00	926	3,200	0.289	V/C:	1.073
	LT	1.00	585	1,600	0.366 *	Lost Time:	0.100
Northbound	RT	1.00	448	1,600	0.097	ITS:	0.000
	TH	2.00	455	3,200	0.142 *	ICU:	1.173
	LT	1.00	55	1,600	0.034	LOS:	F
Eastbound	RT	1.00	169	1,600	0.088		
	TH	2.00	1,345	3,200	0.420 *		
	LT	1.00	60	1,600	0.038		

* - Denotes critical movement

Project Title: The District
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	130	0	0.000	N-S(1):	0.313 *
	TH	2.00	538	3,200	0.209	N-S(2):	0.285
	LT	1.00	78	1,600	0.049 *	E-W(1):	0.347
Westbound	RT	0.00	75	0	0.000	E-W(2):	0.434 *
	TH	3.00	1,572	4,800	0.343 *	V/C:	0.747
	LT	1.00	245	1,600	0.153	Lost Time:	0.100
Northbound	RT	0.00	248	0	0.000	ITS:	0.000
	TH	2.00	598	3,200	0.264 *	ICU:	0.847
	LT	1.00	122	1,600	0.076	LOS:	D
Eastbound	RT	0.00	39	0	0.000		
	TH	3.00	893	4,800	0.194		
	LT	1.00	146	1,600	0.091 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	156	0	0.000	N-S(1):	0.373 *
	TH	2.00	835	3,200	0.310	N-S(2):	0.371
	LT	1.00	194	1,600	0.121 *	E-W(1):	0.544 *
Westbound	RT	0.00	76	0	0.000	E-W(2):	0.414
	TH	3.00	1,402	4,800	0.308	V/C:	0.917
	LT	1.00	258	1,600	0.161 *	Lost Time:	0.100
Northbound	RT	0.00	304	0	0.000	ITS:	0.000
	TH	2.00	503	3,200	0.252 *	ICU:	1.017
	LT	1.00	98	1,600	0.061	LOS:	F
Eastbound	RT	0.00	120	0	0.000		
	TH	3.00	1,718	4,800	0.383 *		
	LT	1.00	169	1,600	0.106		

* - Denotes critical movement

Project Title: The District
Intersection: 9 - Stamps Dr & Del Amo Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 ITS: 0 %
 OLA Movements : NBR,
 FF Movements:

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

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.79	68	2,863	0.018	N-S(1):	0.140 *
	TH	0.21	8	337	0.024 *	N-S(2):	0.000
	LT	1.00	25	1,600	0.016	E-W(1):	0.244
Westbound	RT	0.00	7	0	0.000	E-W(2):	0.303 *
	TH	3.00	1,394	4,800	0.292 *	V/C:	0.443
	LT	2.00	144	2,560	0.056	Lost Time:	0.100
Northbound	RT	1.00	113	1,600	0.014	ITS:	0.000
	TH	0.01	1	11	0.093	ICU:	0.543
	LT	2.99	444	3,831	0.116 *	LOS:	A
Eastbound	RT	1.00	318	1,600	0.141		
	TH	3.00	905	4,800	0.188		
	LT	1.00	17	1,600	0.011 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.81	28	2,890	0.000	N-S(1):	0.169 *
	TH	0.19	3	310	0.010 *	N-S(2):	0.000
	LT	1.00	10	1,600	0.006	E-W(1):	0.426 *
Westbound	RT	0.00	23	0	0.000	E-W(2):	0.273
	TH	3.00	1,131	4,800	0.240	V/C:	0.595
	LT	2.00	243	2,560	0.095 *	Lost Time:	0.100
Northbound	RT	1.00	168	1,600	0.010	ITS:	0.000
	TH	0.01	3	24	0.127	ICU:	0.695
	LT	2.99	607	3,821	0.159 *	LOS:	B
Eastbound	RT	1.00	518	1,600	0.244		
	TH	3.00	1,588	4,800	0.331 *		
	LT	1.00	52	1,600	0.033		

* - Denotes critical movement

Project Title: The District
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	257	0	0.000	N-S(1):	0.262
	TH	3.00	619	4,800	0.182 *	N-S(2):	0.368 *
	LT	2.00	171	2,560	0.067	E-W(1):	0.304
Westbound	RT	1.00	101	1,600	0.030	E-W(2):	0.468 *
	TH	2.00	890	3,200	0.278 *	V/C:	0.836
	LT	1.00	180	1,600	0.113	Lost Time:	0.100
Northbound	RT	1.00	139	1,600	0.031	ITS:	0.000
	TH	3.00	938	4,800	0.195	ICU:	0.936
	LT	1.00	298	1,600	0.186 *	LOS:	E
Eastbound	RT	1.00	138	1,600	0.000		
	TH	2.00	611	3,200	0.191		
	LT	1.00	304	1,600	0.190 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	326	0	0.000	N-S(1):	0.343
	TH	3.00	942	4,800	0.264 *	N-S(2):	0.432 *
	LT	2.00	347	2,560	0.136	E-W(1):	0.483 *
Westbound	RT	1.00	147	1,600	0.024	E-W(2):	0.398
	TH	2.00	756	3,200	0.236	V/C:	0.915
	LT	1.00	261	1,600	0.163 *	Lost Time:	0.100
Northbound	RT	1.00	210	1,600	0.050	ITS:	0.000
	TH	3.00	993	4,800	0.207	ICU:	1.015
	LT	1.00	268	1,600	0.168 *	LOS:	F
Eastbound	RT	1.00	275	1,600	0.088		
	TH	2.00	1,023	3,200	0.320 *		
	LT	1.00	260	1,600	0.162		

* - Denotes critical movement

Project Title: The District
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	415	1,600	0.259 *	N-S(1): 0.223
	TH	2.00	506	3,200	0.158	N-S(2): 0.523 *
	LT	0.00	0	0	0.000	E-W(1): 0.170
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.377 *
	TH	0.00	0	0	0.000 *	V/C: 0.900
	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	713	3,200	0.223	ICU: 1.000
	LT	2.00	677	2,560	0.264 *	LOS: E
Eastbound	RT	0.71	343	1,137	0.170	
	TH	0.00	0	0	0.000	
	LT	1.29	623	1,650	0.377 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	581	1,600	0.363 *	N-S(1): 0.149
	TH	3.00	786	4,800	0.164	N-S(2): 0.616 *
	LT	0.00	0	0	0.000	E-W(1): 0.082
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.261 *
	TH	0.00	0	0	0.000 *	V/C: 0.877
	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	476	3,200	0.149	ICU: 0.977
	LT	2.00	648	2,560	0.253 *	LOS: E
Eastbound	RT	0.70	234	1,121	0.082	
	TH	0.00	0	0	0.000	
	LT	1.30	434	1,663	0.261 *	

* - Denotes critical movement

Project Title: The District
Intersection: 13 - Main St & Lenardo Dr
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.311 *
	TH	2.00	772	3,200	0.241	N-S(2): 0.241
	LT	1.00	65	1,600	0.041 *	E-W(1): 0.026
Westbound	RT	1.00	113	1,600	0.050 *	E-W(2): 0.050 *
	TH	0.00	0	0	0.000	V/C: 0.361
	LT	1.00	42	1,600	0.026	Lost Time: 0.100
Northbound	RT	1.00	253	1,600	0.158	ITS: 0.000
	TH	2.00	865	3,200	0.270 *	ICU: 0.461
	LT	0.00	0	0	0.000	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	0	0	0.000	N-S(1): 0.299
	TH	2.00	1,156	3,200	0.361 *	N-S(2): 0.361 *
	LT	1.00	80	1,600	0.050	E-W(1): 0.057
Westbound	RT	1.00	157	1,600	0.073 *	E-W(2): 0.073 *
	TH	0.00	0	0	0.000	V/C: 0.434
	LT	1.00	92	1,600	0.057	Lost Time: 0.100
Northbound	RT	1.00	399	1,600	0.249	ITS: 0.000
	TH	2.00	774	3,200	0.242	ICU: 0.534
	LT	0.00	0	0	0.000 *	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: The District
Intersection: 14 - Hamilton Ave & W Torrance Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.49	589	2,389	0.215	N-S(1): 0.247 *
	TH	0.00	0	0	0.000	N-S(2): 0.215
	LT	0.51	200	811	0.247 *	E-W(1): 0.341
Westbound	RT	0.00	100	0	0.000	E-W(2): 0.419 *
	TH	2.00	1,038	3,200	0.356 *	V/C: 0.666
	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: 0.766
	LT	0.00	0	0	0.000	LOS: C
Eastbound	RT	0.00	0	0	0.000	
	TH	2.00	1,092	3,200	0.341	
	LT	1.00	100	1,600	0.063 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.13	249	1,803	0.073	N-S(1): 0.138 *
	TH	0.00	0	0	0.000	N-S(2): 0.073
	LT	0.87	193	1,397	0.138 *	E-W(1): 0.429 *
Westbound	RT	0.00	277	0	0.000	E-W(2): 0.419
	TH	2.00	647	3,200	0.288	V/C: 0.567
	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: 0.667
	LT	0.00	0	0	0.000	LOS: B
Eastbound	RT	0.00	0	0	0.000	
	TH	2.00	1,373	3,200	0.429 *	
	LT	1.00	210	1,600	0.131	

* - Denotes critical movement

Project Title: The District
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	439	1,600	0.106	N-S(1):	0.266 *
	TH	2.00	352	3,200	0.110	N-S(2):	0.225
	LT	1.00	81	1,600	0.051 *	E-W(1):	0.498 *
Westbound	RT	1.00	160	1,600	0.075	E-W(2):	0.000
	TH	2.00	516	3,200	0.161 *	V/C:	0.764
	LT	1.00	64	1,600	0.040	Lost Time:	0.100
Northbound	RT	0.00	78	0	0.000	ITS:	0.000
	TH	2.00	610	3,200	0.215 *	ICU:	0.864
	LT	1.00	184	1,600	0.115	LOS:	D
Eastbound	RT	0.00	164	0	0.000		
	TH	1.57	512	2,508	0.270		
	LT	1.43	618	1,833	0.337 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	381	1,600	0.033	N-S(1):	0.230 *
	TH	2.00	473	3,200	0.148	N-S(2):	0.203
	LT	1.00	157	1,600	0.098 *	E-W(1):	0.551 *
Westbound	RT	1.00	168	1,600	0.056	E-W(2):	0.000
	TH	2.00	452	3,200	0.141 *	V/C:	0.781
	LT	1.00	50	1,600	0.032	Lost Time:	0.100
Northbound	RT	0.00	72	0	0.000	ITS:	0.000
	TH	2.00	349	3,200	0.132 *	ICU:	0.881
	LT	1.00	88	1,600	0.055	LOS:	D
Eastbound	RT	0.00	163	0	0.000		
	TH	1.82	792	2,914	0.328		
	LT	1.18	618	1,509	0.410 *		

* - Denotes critical movement

Project Title: The District
Intersection: 16 - S Main St & W Torrance Blvd
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	298	1,600	0.069	N-S(1):	0.248
	TH	2.00	486	3,200	0.152 *	N-S(2):	0.300 *
	LT	1.00	12	1,600	0.008	E-W(1):	0.312 *
Westbound	RT	0.00	36	0	0.000	E-W(2):	0.000
	TH	1.00	77	1,600	0.077 *	V/C:	0.612
	LT	0.00	10	1,600	0.006	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	760	3,200	0.240	ICU:	0.712
	LT	2.00	379	2,560	0.148 *	LOS:	C
Eastbound	RT	1.00	235	1,600	0.073		
	TH	0.06	24	102	0.235		
	LT	0.94	352	1,498	0.235 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	375	1,600	0.076	N-S(1):	0.249
	TH	2.00	791	3,200	0.247 *	N-S(2):	0.359 *
	LT	1.00	46	1,600	0.029	E-W(1):	0.367 *
Westbound	RT	0.00	26	0	0.000	E-W(2):	0.000
	TH	1.00	44	1,600	0.051 *	V/C:	0.726
	LT	0.00	11	1,600	0.007	Lost Time:	0.100
Northbound	RT	0.00	9	0	0.000	ITS:	0.000
	TH	2.00	695	3,200	0.220	ICU:	0.826
	LT	2.00	287	2,560	0.112 *	LOS:	D
Eastbound	RT	1.00	521	1,600	0.270		
	TH	0.14	72	228	0.316		
	LT	0.86	434	1,372	0.316 *		

* - Denotes critical movement

Project Title: The District
Intersection: 17 - Lenardo Dr & I-405 SB Ramps
Description: Cumulative Base plus Project Alternative

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, WBR		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	117	1,600	0.000	N-S(1): 0.372 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	2.00	952	2,560	0.372 *	E-W(1): 0.072
Westbound	RT	1.00	289	1,600	0.000	E-W(2): 0.084 *
	TH	2.00	258	3,200	0.081 *	V/C: 0.456
	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: 0.556
	TH	3.00	343	4,800	0.072	
	LT	0.00	4	1,600	0.003 *	LOS: A

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	189	1,600	0.000	N-S(1): 0.234 *
	TH	0.00	0	0	0.000	N-S(2): 0.000
	LT	2.00	600	2,560	0.234 *	E-W(1): 0.142 *
Westbound	RT	1.00	411	1,600	0.000	E-W(2): 0.124
	TH	2.00	394	3,200	0.123	V/C: 0.376
	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: 0.476
	TH	3.00	679	4,800	0.142 *	
	LT	0.00	2	1,600	0.001	LOS: A

* - Denotes critical movement

Project Title: The District
Intersection: 18 - S Avalon Blvd & I-405 SB Ramps
Description: Cumulative Base plus Project Alternative

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:	SBR, EBR,		

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	434	1,600	0.000	N-S(1): 0.380 *
	TH	2.00	742	3,200	0.232	N-S(2): 0.303
	LT	0.00	0	0	0.000 *	E-W(1): 0.036
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.221 *
	TH	0.00	0	0	0.000 *	V/C: 0.601
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	125	0	0.000	ITS: 0.000
	TH	2.00	1,090	3,200	0.380 *	ICU: 0.701
	LT	1.00	113	1,600	0.071	LOS: C
Eastbound	RT	1.00	613	1,600	0.000	
	TH	2.00	115	3,200	0.036	
	LT	2.00	566	2,560	0.221 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	663	1,600	0.000	N-S(1): 0.449 *
	TH	2.00	1,002	3,200	0.313	N-S(2): 0.402
	LT	0.00	0	0	0.000 *	E-W(1): 0.117
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.143 *
	TH	0.00	0	0	0.000 *	V/C: 0.592
	LT	0.00	0	0	0.000	Lost Time: 0.100
Northbound	RT	0.00	195	0	0.000	ITS: 0.000
	TH	2.00	1,242	3,200	0.449 *	ICU: 0.692
	LT	1.00	143	1,600	0.089	LOS: B
Eastbound	RT	1.00	538	1,600	0.000	
	TH	2.00	374	3,200	0.117	
	LT	2.00	366	2,560	0.143 *	

* - Denotes critical movement

Project Title: The District
Intersection: 19 - S Avalon Blvd & I-405 NB Ramps
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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: WBR

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	229	1,600	0.143	N-S(1): 0.392 * N-S(2): 0.356 E-W(1): 0.088 * E-W(2): 0.070
	TH	3.00	896	4,800	0.187	
	LT	0.00	0	0	0.000 *	
Westbound	RT	1.00	581	1,600	0.000	V/C: 0.480 Lost Time: 0.100 ITS: 0.000
	TH	0.02	2	28	0.070	
	LT	1.98	224	2,537	0.088 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.580
	TH	2.00	1,254	3,200	0.392 *	
	LT	2.00	433	2,560	0.169	
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	1.00	521	1,600	0.326 *	N-S(1): 0.315 N-S(2): 0.547 * E-W(1): 0.125 * E-W(2): 0.000
	TH	3.00	1,324	4,800	0.276	
	LT	0.00	0	0	0.000	
Westbound	RT	1.00	455	1,600	0.000	V/C: 0.672 Lost Time: 0.100 ITS: 0.000
	TH	0.00	0	0	0.000	
	LT	2.00	321	2,560	0.125 *	
Northbound	RT	0.00	0	0	0.000	ICU: 0.772
	TH	2.00	1,009	3,200	0.315	
	LT	2.00	567	2,560	0.221 *	
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: The District
Intersection: 20 - S Main St & E 213th St
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.394 *
	TH	2.00	568	3,200	0.177	N-S(2): 0.180
	LT	1.00	124	1,600	0.078 *	E-W(1): 0.383 *
Westbound	RT	0.51	312	814	0.344	E-W(2): 0.344
	TH	0.00	0	0	0.000	V/C: 0.777
	LT	0.49	301	786	0.383 *	Lost Time: 0.100
Northbound	RT	0.00	166	0	0.000	ITS: 0.000
	TH	2.00	840	1,600	0.316 *	ICU: 0.877
	LT	0.00	4	1,600	0.003	LOS: D
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	0	0	0.000	N-S(1): 0.554 *
	TH	2.00	912	3,200	0.285	N-S(2): 0.288
	LT	1.00	371	1,600	0.232 *	E-W(1): 0.254 *
Westbound	RT	0.42	171	674	0.138	E-W(2): 0.138
	TH	0.00	0	0	0.000	V/C: 0.808
	LT	0.58	235	926	0.254 *	Lost Time: 0.100
Northbound	RT	0.00	271	0	0.000	ITS: 0.000
	TH	2.00	755	1,600	0.322 *	ICU: 0.908
	LT	0.00	5	1,600	0.003	LOS: E
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: The District
Intersection: 21 - S Avalon Blvd & E 213th St
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
Left Lane: 1600 vph
Double Lt Penalty: 20 %
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	178	0	0.000	N-S(1):	0.281
	TH	3.00	1,056	4,800	0.257 *	N-S(2):	0.325 *
	LT	1.00	79	1,600	0.050	E-W(1):	0.264 *
Westbound	RT	0.00	91	0	0.000	E-W(2):	0.257
	TH	2.00	243	3,200	0.104	V/C:	0.589
	LT	1.00	127	1,600	0.079 *	Lost Time:	0.100
Northbound	RT	0.00	139	0	0.000	ITS:	0.000
	TH	3.00	971	4,800	0.231	ICU:	0.689
	LT	1.00	108	1,600	0.068 *	LOS:	B
Eastbound	RT	0.30	88	476	0.151		
	TH	0.70	208	1,124	0.185 *		
	LT	1.00	244	1,600	0.153		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	189	0	0.000	N-S(1):	0.342
	TH	3.00	1,188	4,800	0.287 *	N-S(2):	0.380 *
	LT	1.00	117	1,600	0.073	E-W(1):	0.340 *
Westbound	RT	0.00	104	0	0.000	E-W(2):	0.263
	TH	2.00	212	3,200	0.099	V/C:	0.720
	LT	1.00	126	1,600	0.079 *	Lost Time:	0.100
Northbound	RT	0.00	130	0	0.000	ITS:	0.000
	TH	3.00	1,163	4,800	0.269	ICU:	0.820
	LT	1.00	148	1,600	0.093 *	LOS:	D
Eastbound	RT	0.27	113	434	0.214		
	TH	0.73	304	1,166	0.261 *		
	LT	1.00	263	1,600	0.164		

* - Denotes critical movement

Project Title: The District
Intersection: 22 - S Vermont Ave & W Carson St
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph	N-S Split Phase : N
Left Lane: 1600 vph	E-W Split Phase : N
Double Lt Penalty: 20 %	Lost Time (% of cycle) : 10
ITS: 0 %	V/C Round Off (decs.) : 3
OLA Movements :	
FF Movements:	

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	229	1,600	0.096	N-S(1): 0.337 *
	TH	2.00	437	3,200	0.137	N-S(2): 0.263
	LT	1.00	122	1,600	0.076 *	E-W(1): 0.447
Westbound	RT	1.00	137	1,600	0.048	E-W(2): 0.499 *
	TH	2.00	1,297	3,200	0.405 *	V/C: 0.836
	LT	1.00	328	1,600	0.205	Lost Time: 0.100
Northbound	RT	1.00	173	1,600	0.006	ITS: 0.000
	TH	2.00	836	3,200	0.261 *	ICU: 0.936
	LT	1.00	201	1,600	0.126	LOS: E
Eastbound	RT	1.00	91	1,600	0.000	
	TH	2.00	773	3,200	0.242	
	LT	1.00	151	1,600	0.094 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	272	1,600	0.119	N-S(1): 0.286
	TH	2.00	759	3,200	0.237 *	N-S(2): 0.313 *
	LT	1.00	225	1,600	0.141	E-W(1): 0.400 *
Westbound	RT	1.00	104	1,600	0.000	E-W(2): 0.380
	TH	2.00	890	3,200	0.278	V/C: 0.713
	LT	1.00	117	1,600	0.073 *	Lost Time: 0.100
Northbound	RT	1.00	210	1,600	0.095	ITS: 0.000
	TH	2.00	464	3,200	0.145	ICU: 0.813
	LT	1.00	122	1,600	0.076 *	LOS: D
Eastbound	RT	1.00	216	1,600	0.097	
	TH	2.00	1,046	3,200	0.327 *	
	LT	1.00	163	1,600	0.102	

* - Denotes critical movement

Project Title: The District
Intersection: 23 - Figueroa St & W Carson St
Description: Cumulative Base plus Project Alternative

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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	325	0	0.000	N-S(1): 0.239
	TH	2.00	392	3,200	0.224 *	N-S(2): 0.363 *
	LT	2.00	45	2,560	0.018	E-W(1): 0.236
Westbound	RT	0.00	47	0	0.000	E-W(2): 0.259 *
	TH	2.00	483	3,200	0.166 *	V/C: 0.622
	LT	1.00	40	1,600	0.025	Lost Time: 0.100
Northbound	RT	0.00	155	0	0.000	ITS: 0.000
	TH	2.00	553	3,200	0.221	ICU: 0.722
	LT	2.00	357	2,560	0.139 *	LOS: C
Eastbound	RT	1.00	449	1,600	0.211	
	TH	2.00	425	3,200	0.133	
	LT	1.00	149	1,600	0.093 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	184	0	0.000	N-S(1): 0.196
	TH	2.00	456	3,200	0.200 *	N-S(2): 0.293 *
	LT	2.00	91	2,560	0.036	E-W(1): 0.322 *
Westbound	RT	0.00	34	0	0.000	E-W(2): 0.246
	TH	2.00	485	3,200	0.162	V/C: 0.615
	LT	1.00	72	1,600	0.045 *	Lost Time: 0.100
Northbound	RT	0.00	134	0	0.000	ITS: 0.000
	TH	2.00	377	3,200	0.160	ICU: 0.715
	LT	2.00	237	2,560	0.093 *	LOS: C
Eastbound	RT	1.00	518	1,600	0.277 *	
	TH	2.00	707	3,200	0.221	
	LT	1.00	135	1,600	0.084	

* - Denotes critical movement

Project Title: The District
Intersection: 24 - S Main St & W Carson St
Description: Cumulative Base plus Project Alternative

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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	78	0	0.000	N-S(1): 0.231 *
	TH	3.00	553	4,800	0.131	N-S(2): 0.216
	LT	1.00	57	1,600	0.036 *	E-W(1): 0.166
Westbound	RT	1.00	58	1,600	0.018	E-W(2): 0.220 *
	TH	2.00	366	3,200	0.115 *	V/C: 0.451
	LT	1.00	91	1,600	0.057	Lost Time: 0.100
Northbound	RT	0.00	118	0	0.000	ITS: 0.000
	TH	3.00	816	4,800	0.195 *	ICU: 0.551
	LT	1.00	136	1,600	0.085	LOS: A
Eastbound	RT	1.00	102	1,600	0.021	
	TH	2.00	350	3,200	0.109	
	LT	1.00	168	1,600	0.105 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	112	0	0.000	N-S(1): 0.262
	TH	3.00	799	4,800	0.190 *	N-S(2): 0.292 *
	LT	1.00	165	1,600	0.103	E-W(1): 0.272
Westbound	RT	1.00	53	1,600	0.000	E-W(2): 0.283 *
	TH	2.00	422	3,200	0.132 *	V/C: 0.575
	LT	1.00	169	1,600	0.106	Lost Time: 0.100
Northbound	RT	0.00	100	0	0.000	ITS: 0.000
	TH	3.00	664	4,800	0.159	ICU: 0.675
	LT	1.00	163	1,600	0.102 *	LOS: B
Eastbound	RT	1.00	43	1,600	0.000	
	TH	2.00	530	3,200	0.166	
	LT	1.00	242	1,600	0.151 *	

* - Denotes critical movement

Project Title: The District
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	108	0	0.000	N-S(1):	0.483 *
	TH	3.00	797	4,800	0.188	N-S(2):	0.230
	LT	1.00	255	1,600	0.159 *	E-W(1):	0.325 *
Westbound	RT	0.00	164	0	0.000	E-W(2):	0.214
	TH	2.00	350	3,200	0.161	V/C:	0.808
	LT	2.00	395	2,560	0.154 *	Lost Time:	0.100
Northbound	RT	0.00	518	1,600	0.324 *	ITS:	0.000
	TH	3.00	775	3,200	0.242	ICU:	0.908
	LT	1.00	67	1,600	0.042	LOS:	E
Eastbound	RT	0.00	67	0	0.000		
	TH	2.00	480	3,200	0.171 *		
	LT	2.00	135	2,560	0.053		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	225	0	0.000	N-S(1):	0.512 *
	TH	3.00	847	4,800	0.223	N-S(2):	0.284
	LT	1.00	341	1,600	0.213 *	E-W(1):	0.377 *
Westbound	RT	0.00	191	0	0.000	E-W(2):	0.267
	TH	2.00	434	3,200	0.195	V/C:	0.889
	LT	2.00	392	2,560	0.153 *	Lost Time:	0.100
Northbound	RT	0.00	478	1,600	0.299 *	ITS:	0.000
	TH	3.00	813	3,200	0.254	ICU:	0.989
	LT	1.00	97	1,600	0.061	LOS:	E
Eastbound	RT	0.00	73	0	0.000		
	TH	2.00	644	3,200	0.224 *		
	LT	2.00	185	2,560	0.072		

* - Denotes critical movement

Project Title: The District
Intersection: 26 - SR 405 SB Ramps & E Carson St
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	10	0	0.000	N-S(1): 0.107 *
	TH	0.00	0	0	0.000	N-S(2): 0.064
	LT	0.00	0	0	0.000 *	E-W(1): 0.445 *
Westbound	RT	0.00	20	0	0.000	E-W(2): 0.247
	TH	3.00	1,148	4,800	0.243	V/C: 0.552
	LT	1.00	111	1,600	0.069 *	Lost Time: 0.100
Northbound	RT	1.00	227	1,600	0.107 *	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.652
	LT	1.00	103	1,600	0.064	LOS: B
Eastbound	RT	1.00	653	1,600	0.376 *	
	TH	2.00	689	3,200	0.215	
	LT	1.00	7	1,600	0.004	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	7	0	0.000	N-S(1): 0.003
	TH	0.00	0	0	0.000 *	N-S(2): 0.033 *
	LT	0.00	0	0	0.000	E-W(1): 0.571 *
Westbound	RT	0.00	22	0	0.000	E-W(2): 0.246
	TH	3.00	1,116	4,800	0.237	V/C: 0.604
	LT	1.00	109	1,600	0.068 *	Lost Time: 0.100
Northbound	RT	1.00	59	1,600	0.003	ITS: 0.000
	TH	0.00	0	0	0.000	ICU: 0.704
	LT	1.00	52	1,600	0.033 *	LOS: C
Eastbound	RT	1.00	831	1,600	0.503 *	
	TH	2.00	1,143	3,200	0.357	
	LT	1.00	15	1,600	0.009	

* - Denotes critical movement

Project Title: The District
Intersection: 27 - SR 405 NB Ramps & E Carson St
Description: Cumulative Base plus Project Alternative

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	443	1,600	0.000	N-S(1):	0.030 *
	TH	0.41	15	649	0.023 *	N-S(2):	0.030 *
	LT	0.59	22	951	0.023 *	E-W(1):	0.261
Westbound	RT	1.00	256	1,600	0.148	E-W(2):	0.329 *
	TH	2.00	847	3,200	0.265 *	V/C:	0.359
	LT	1.00	14	1,600	0.009	Lost Time:	0.100
Northbound	RT	1.00	4	1,600	0.000	ITS:	0.000
	TH	0.36	4	582	0.007 *	ICU:	0.459
	LT	0.64	7	1,018	0.007 *	LOS:	A
Eastbound	RT	0.00	40	0	0.000		
	TH	2.00	768	3,200	0.252		
	LT	1.00	102	1,600	0.064 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	440	1,600	0.000	N-S(1):	0.065 *
	TH	0.17	8	272	0.029 *	N-S(2):	0.065 *
	LT	0.83	39	1,328	0.029 *	E-W(1):	0.351 *
Westbound	RT	1.00	393	1,600	0.231	E-W(2):	0.327
	TH	2.00	775	3,200	0.242	V/C:	0.416
	LT	1.00	24	1,600	0.015 *	Lost Time:	0.100
Northbound	RT	1.00	21	1,600	0.006	ITS:	0.000
	TH	0.37	21	589	0.036 *	ICU:	0.516
	LT	0.63	36	1,011	0.036 *	LOS:	A
Eastbound	RT	0.00	36	0	0.000		
	TH	2.00	1,039	3,200	0.336 *		
	LT	1.00	136	1,600	0.085		

* - Denotes critical movement

EXISTING PLUS PROJECT WITH MITIGATION - ICU

Project Title: The District
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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): 0.298 *
	TH	2.00	741	3,200	0.231	N-S(2): 0.232
	LT	1.00	88	1,600	0.055 *	E-W(1): 0.042 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.016
	TH	0.00	0	0	0.000	V/C: 0.340
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	68	0	0.000	ITS: 0.000
	TH	2.00	707	1,600	0.243 *	ICU: 0.440
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.00	11	0	0.000	
	TH	2.00	96	1,600	0.042 *	
	LT	0.00	26	1,600	0.016	

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): 0.395 *
	TH	2.00	1,183	3,200	0.370	N-S(2): 0.370
	LT	1.00	226	1,600	0.141 *	E-W(1): 0.218 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.613
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	134	0	0.000	ITS: 0.000
	TH	2.00	677	3,200	0.254 *	ICU: 0.713
	LT	0.00	0	0	0.000	LOS: C
Eastbound	RT	0.00	45	0	0.000	
	TH	2.00	636	1,600	0.218 *	
	LT	0.00	17	1,600	0.011	

* - Denotes critical movement

Project Title: The District
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	16	1,600	0.000	N-S(1): 0.321 *
	TH	2.00	263	3,200	0.082	N-S(2): 0.100
	LT	1.00	141	1,600	0.088 *	E-W(1): 0.195
Westbound	RT	1.00	416	1,600	0.216 *	E-W(2): 0.255 *
	TH	1.00	229	1,600	0.143	V/C: 0.576
	LT	2.00	385	2,560	0.150	Lost Time: 0.100
Northbound	RT	1.00	268	1,600	0.092	ITS: 0.000
	TH	2.00	746	3,200	0.233 *	ICU: 0.676
	LT	1.00	28	1,600	0.018	LOS: B
Eastbound	RT	0.00	16	0	0.000	
	TH	2.00	130	3,200	0.045	
	LT	1.00	62	1,600	0.039 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	84	1,600	0.044	N-S(1): 0.441 *
	TH	2.00	952	3,200	0.298	N-S(2): 0.301
	LT	1.00	449	1,600	0.281 *	E-W(1): 0.206 *
Westbound	RT	1.00	228	1,600	0.002	E-W(2): 0.139
	TH	1.00	194	1,600	0.121	V/C: 0.647
	LT	2.00	376	2,560	0.147 *	Lost Time: 0.100
Northbound	RT	1.00	209	1,600	0.057	ITS: 0.000
	TH	2.00	513	3,200	0.160 *	ICU: 0.747
	LT	1.00	4	1,600	0.003	LOS: C
Eastbound	RT	0.00	14	0	0.000	
	TH	2.00	173	3,200	0.059 *	
	LT	1.00	28	1,600	0.018	

* - Denotes critical movement

Project Title: The District
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	437	1,600	0.273 *	N-S(1):	0.250
	TH	2.00	378	1,600	0.236	N-S(2):	0.396 *
	LT	2.00	65	2,560	0.025	E-W(1):	0.306
Westbound	RT	0.00	179	0	0.000	E-W(2):	0.358 *
	TH	3.00	1,100	4,800	0.267 *	V/C:	0.754
	LT	2.00	392	2,560	0.153	Lost Time:	0.100
Northbound	RT	2.00	358	3,200	0.035	ITS:	0.000
	TH	2.00	721	3,200	0.225	ICU:	0.854
	LT	1.00	196	1,600	0.123 *	LOS:	D
Eastbound	RT	0.00	98	0	0.000		
	TH	3.00	635	4,800	0.153		
	LT	1.00	146	1,600	0.091 *		

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):	0.226
	TH	2.00	576	3,200	0.251 *	N-S(2):	0.284 *
	LT	2.00	224	2,560	0.088	E-W(1):	0.521 *
Westbound	RT	0.00	141	0	0.000	E-W(2):	0.252
	TH	3.00	894	4,800	0.216	V/C:	0.805
	LT	2.00	561	2,560	0.219 *	Lost Time:	0.100
Northbound	RT	2.00	419	3,200	0.021	ITS:	0.000
	TH	2.00	442	3,200	0.138	ICU:	0.905
	LT	1.00	53	1,600	0.033 *	LOS:	E
Eastbound	RT	0.00	164	0	0.000		
	TH	3.00	1,286	4,800	0.302 *		
	LT	1.00	58	1,600	0.036		

* - Denotes critical movement

Project Title: The District
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 ITS: 0 %
 OLA Movements :
 FF Movements:

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

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	126	0	0.000	N-S(1): 0.226 *
	TH	3.00	523	4,800	0.135	N-S(2): 0.210
	LT	1.00	74	1,600	0.046 *	E-W(1): 0.269
Westbound	RT	0.00	73	0	0.000	E-W(2): 0.412 *
	TH	3.00	1,479	4,800	0.323 *	V/C: 0.638
	LT	2.00	229	2,560	0.090	Lost Time: 0.100
Northbound	RT	1.00	240	1,600	0.105	ITS: 0.000
	TH	2.00	577	3,200	0.180 *	ICU: 0.738
	LT	1.00	120	1,600	0.075	LOS: C
Eastbound	RT	1.00	38	1,600	0.000	
	TH	3.00	859	4,800	0.179	
	LT	1.00	142	1,600	0.089 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	151	0	0.000	N-S(1): 0.265 *
	TH	3.00	809	4,800	0.200	N-S(2): 0.261
	LT	1.00	183	1,600	0.114 *	E-W(1): 0.436 *
Westbound	RT	0.00	74	0	0.000	E-W(2): 0.399
	TH	3.00	1,347	4,800	0.296	V/C: 0.701
	LT	2.00	246	2,560	0.096 *	Lost Time: 0.100
Northbound	RT	1.00	295	1,600	0.136	ITS: 0.000
	TH	2.00	483	3,200	0.151 *	ICU: 0.801
	LT	1.00	97	1,600	0.061	LOS: D
Eastbound	RT	1.00	116	1,600	0.042	
	TH	3.00	1,634	4,800	0.340 *	
	LT	1.00	164	1,600	0.103	

* - Denotes critical movement

Project Title: The District
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	250	1,600	0.064	N-S(1):	0.250 *
	TH	3.00	588	4,800	0.123	N-S(2):	0.234
	LT	2.00	166	2,560	0.065 *	E-W(1):	0.293
Westbound	RT	1.00	98	1,600	0.029	E-W(2):	0.454 *
	TH	2.00	864	3,200	0.270 *	V/C:	0.704
	LT	1.00	175	1,600	0.109	Lost Time:	0.100
Northbound	RT	1.00	135	1,600	0.030	ITS:	0.000
	TH	3.00	886	4,800	0.185 *	ICU:	0.804
	LT	2.00	284	2,560	0.111	LOS:	D
Eastbound	RT	1.00	116	1,600	0.017		
	TH	2.00	589	3,200	0.184		
	LT	1.00	294	1,600	0.184 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	316	1,600	0.119	N-S(1):	0.328 *
	TH	3.00	885	4,800	0.184	N-S(2):	0.280
	LT	2.00	337	2,560	0.132 *	E-W(1):	0.466 *
Westbound	RT	1.00	143	1,600	0.024	E-W(2):	0.385
	TH	2.00	727	3,200	0.227	V/C:	0.794
	LT	1.00	253	1,600	0.158 *	Lost Time:	0.100
Northbound	RT	1.00	204	1,600	0.048	ITS:	0.000
	TH	3.00	941	4,800	0.196 *	ICU:	0.894
	LT	2.00	245	2,560	0.096	LOS:	D
Eastbound	RT	1.00	260	1,600	0.114		
	TH	2.00	987	3,200	0.308 *		
	LT	1.00	253	1,600	0.158		

* - Denotes critical movement

Project Title: The District
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.74	374	2,783	0.134	N-S(1):	0.215
	TH	2.26	485	3,617	0.134 *	N-S(2):	0.389 *
	LT	0.00	0	0	0.000	E-W(1):	0.081
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.235 *
	TH	0.00	0	0	0.000 *	V/C:	0.624
	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	688	3,200	0.215	ICU:	0.724
	LT	2.00	653	2,560	0.255 *	LOS:	C
Eastbound	RT	1.00	334	1,600	0.081		
	TH	0.00	0	0	0.000		
	LT	2.00	603	2,560	0.235 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.69	559	2,711	0.206 *	N-S(1):	0.142
	TH	3.00	760	4,800	0.158	N-S(2):	0.451 *
	LT	0.00	0	0	0.000	E-W(1):	0.020
Westbound	RT	0.00	0	0	0.000	E-W(2):	0.162 *
	TH	0.00	0	0	0.000 *	V/C:	0.613
	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	453	3,200	0.142	ICU:	0.713
	LT	2.00	627	2,560	0.245 *	LOS:	C
Eastbound	RT	1.00	228	1,600	0.020		
	TH	0.00	0	0	0.000		
	LT	2.00	414	2,560	0.162 *		

* - Denotes critical movement

Project Title: The District
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	1.00	426	1,600	0.103	N-S(1):	0.234 *
	TH	2.00	335	3,200	0.105	N-S(2):	0.217
	LT	1.00	79	1,600	0.050 *	E-W(1):	0.482 *
Westbound	RT	1.00	151	1,600	0.070	E-W(2):	0.000
	TH	2.00	495	3,200	0.155 *	V/C:	0.716
	LT	1.00	62	1,600	0.039	Lost Time:	0.100
Northbound	RT	1.00	76	1,600	0.028	ITS:	0.000
	TH	2.00	588	3,200	0.184 *	ICU:	0.816
	LT	1.00	179	1,600	0.112	LOS:	D
Eastbound	RT	0.00	159	0	0.000		
	TH	1.57	495	2,504	0.261		
	LT	1.43	600	1,837	0.327 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	370	1,600	0.034	N-S(1):	0.199 *
	TH	2.00	457	3,200	0.143	N-S(2):	0.196
	LT	1.00	154	1,600	0.096 *	E-W(1):	0.532 *
Westbound	RT	1.00	161	1,600	0.052	E-W(2):	0.000
	TH	2.00	438	3,200	0.137 *	V/C:	0.731
	LT	1.00	49	1,600	0.031	Lost Time:	0.100
Northbound	RT	1.00	70	1,600	0.028	ITS:	0.000
	TH	2.00	330	3,200	0.103 *	ICU:	0.831
	LT	1.00	85	1,600	0.053	LOS:	D
Eastbound	RT	0.00	158	0	0.000		
	TH	1.81	761	2,903	0.316		
	LT	1.19	600	1,517	0.395 *		

* - Denotes critical movement

Project Title: The District
Intersection: 20 - S Main St & E 213th St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	544	3,200	0.170	N-S(2): 0.173
	LT	1.00	119	1,600	0.074 *	E-W(1): 0.183 *
Westbound	RT	1.00	303	1,600	0.152	E-W(2): 0.152
	TH	0.00	0	0	0.000	V/C: 0.564
	LT	1.00	292	1,600	0.183 *	Lost Time: 0.100
Northbound	RT	0.00	161	0	0.000	ITS: 0.000
	TH	2.00	816	1,600	0.307 *	ICU: 0.664
	LT	0.00	4	1,600	0.003	LOS: B
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	0	0	0.000	N-S(1): 0.538 *
	TH	2.00	880	3,200	0.275	N-S(2): 0.278
	LT	1.00	360	1,600	0.225 *	E-W(1): 0.143 *
Westbound	RT	1.00	165	1,600	0.000	E-W(2): 0.000
	TH	0.00	0	0	0.000	V/C: 0.681
	LT	1.00	228	1,600	0.143 *	Lost Time: 0.100
Northbound	RT	0.00	263	0	0.000	ITS: 0.000
	TH	2.00	735	1,600	0.313 *	ICU: 0.781
	LT	0.00	5	1,600	0.003	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: The District
Intersection: 22 - S Vermont Ave & W Carson St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	223	1,600	0.095	N-S(1):	0.322 *
	TH	2.00	423	3,200	0.132	N-S(2):	0.254
	LT	1.00	112	1,600	0.070 *	E-W(1):	0.371 *
Westbound	RT	0.00	125	0	0.000	E-W(2):	0.371 *
	TH	3.00	1,229	4,800	0.282 *	V/C:	0.693
	LT	1.00	318	1,600	0.199 *	Lost Time:	0.100
Northbound	RT	1.00	168	1,600	0.006	ITS:	0.000
	TH	2.00	807	3,200	0.252 *	ICU:	0.793
	LT	1.00	195	1,600	0.122	LOS:	C
Eastbound	RT	0.00	88	0	0.000		
	TH	3.00	739	4,800	0.172 *		
	LT	1.00	143	1,600	0.089 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	260	1,600	0.114	N-S(1):	0.269
	TH	2.00	732	3,200	0.229 *	N-S(2):	0.303 *
	LT	1.00	208	1,600	0.130	E-W(1):	0.320 *
Westbound	RT	0.00	94	0	0.000	E-W(2):	0.291
	TH	3.00	843	4,800	0.195	V/C:	0.623
	LT	1.00	114	1,600	0.071 *	Lost Time:	0.100
Northbound	RT	1.00	204	1,600	0.092	ITS:	0.000
	TH	2.00	446	3,200	0.139	ICU:	0.723
	LT	1.00	118	1,600	0.074 *	LOS:	C
Eastbound	RT	0.00	210	0	0.000		
	TH	3.00	987	4,800	0.249 *		
	LT	1.00	154	1,600	0.096		

* - Denotes critical movement

Project Title: The District
Intersection: 23 - Figueroa St & W Carson St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	311	0	0.000	N-S(1):	0.231
	TH	2.00	380	3,200	0.216 *	N-S(2):	0.350 *
	LT	2.00	44	2,560	0.017	E-W(1):	0.230
Westbound	RT	0.00	46	0	0.000	E-W(2):	0.241 *
	TH	2.00	437	3,200	0.151 *	V/C:	0.591
	LT	1.00	39	1,600	0.025	Lost Time:	0.100
Northbound	RT	0.00	148	0	0.000	ITS:	0.000
	TH	2.00	535	3,200	0.214	ICU:	0.691
	LT	2.00	344	2,560	0.134 *	LOS:	B
Eastbound	RT	1.00	435	1,600	0.205		
	TH	2.00	400	3,200	0.125		
	LT	1.00	144	1,600	0.090 *		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	0.00	177	0	0.000	N-S(1):	0.187
	TH	2.00	442	3,200	0.193 *	N-S(2):	0.282 *
	LT	2.00	88	2,560	0.034	E-W(1):	0.311 *
Westbound	RT	0.00	33	0	0.000	E-W(2):	0.228
	TH	2.00	445	3,200	0.149	V/C:	0.593
	LT	1.00	68	1,600	0.043 *	Lost Time:	0.100
Northbound	RT	0.00	126	0	0.000	ITS:	0.000
	TH	2.00	362	3,200	0.153	ICU:	0.693
	LT	2.00	229	2,560	0.089 *	LOS:	B
Eastbound	RT	1.00	500	1,600	0.268 *		
	TH	2.00	656	3,200	0.205		
	LT	1.00	127	1,600	0.079		

* - Denotes critical movement

Project Title: The District
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Existing plus Project with Mitigations

Thru Lane: 1600 vph
 Left Lane: 1600 vph
 Double Lt Penalty: 20 %
 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	106	1,600	0.044	N-S(1):	0.360 *
	TH	2.00	756	3,200	0.236	N-S(2):	0.274
	LT	1.00	192	1,600	0.120 *	E-W(1):	0.313 *
Westbound	RT	0.00	155	0	0.000	E-W(2):	0.193
	TH	2.00	318	3,200	0.148	V/C:	0.673
	LT	2.00	383	2,560	0.150 *	Lost Time:	0.100
Northbound	RT	1.00	503	1,600	0.240 *	ITS:	0.000
	TH	2.00	750	3,200	0.235	ICU:	0.773
	LT	1.00	60	1,600	0.038	LOS:	C
Eastbound	RT	0.00	65	0	0.000		
	TH	2.00	457	3,200	0.163 *		
	LT	2.00	115	2,560	0.045		

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS	
Southbound	RT	1.00	221	1,600	0.106	N-S(1):	0.426 *
	TH	2.00	805	3,200	0.252	N-S(2):	0.299
	LT	1.00	288	1,600	0.180 *	E-W(1):	0.364 *
Westbound	RT	0.00	179	0	0.000	E-W(2):	0.232
	TH	2.00	356	3,200	0.167	V/C:	0.790
	LT	2.00	380	2,560	0.148 *	Lost Time:	0.100
Northbound	RT	1.00	464	1,600	0.216	ITS:	0.000
	TH	2.00	786	3,200	0.246 *	ICU:	0.890
	LT	1.00	75	1,600	0.047	LOS:	D
Eastbound	RT	0.00	71	0	0.000		
	TH	2.00	621	3,200	0.216 *		
	LT	2.00	166	2,560	0.065		

* - Denotes critical movement

FUTURE PLUS PROJECT WITH MITIGATION - ICU

Project Title: The District
Intersection: 3 - S Main St & I-405 SB On Ramp
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	0	0	0.000	N-S(1): 0.310 *
	TH	2.00	764	3,200	0.239	N-S(2): 0.240
	LT	1.00	91	1,600	0.057 *	E-W(1): 0.043 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.017
	TH	0.00	0	0	0.000	V/C: 0.353
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	74	0	0.000	ITS: 0.000
	TH	2.00	734	1,600	0.253 *	ICU: 0.453
	LT	0.00	2	1,600	0.001	LOS: A
Eastbound	RT	0.00	11	0	0.000	
	TH	2.00	99	1,600	0.043 *	
	LT	0.00	27	1,600	0.017	

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): 0.408 *
	TH	2.00	1,226	3,200	0.383	N-S(2): 0.383
	LT	1.00	234	1,600	0.146 *	E-W(1): 0.225 *
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.011
	TH	0.00	0	0	0.000	V/C: 0.633
	LT	0.00	0	0	0.000 *	Lost Time: 0.100
Northbound	RT	0.00	140	0	0.000	ITS: 0.000
	TH	2.00	698	3,200	0.262 *	ICU: 0.733
	LT	0.00	0	0	0.000	LOS: C
Eastbound	RT	0.00	46	0	0.000	
	TH	2.00	655	1,600	0.225 *	
	LT	0.00	18	1,600	0.011	

* - Denotes critical movement

Project Title: The District
Intersection: 5 - S Vermont Ave & Del Amo Blvd
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	16	1,600	0.000	N-S(1): 0.337 *
	TH	2.00	275	3,200	0.086	N-S(2): 0.104
	LT	1.00	146	1,600	0.091 *	E-W(1): 0.201
Westbound	RT	1.00	430	1,600	0.223 *	E-W(2): 0.263 *
	TH	1.00	236	1,600	0.148	V/C: 0.600
	LT	2.00	398	2,560	0.155	Lost Time: 0.100
Northbound	RT	1.00	277	1,600	0.095	ITS: 0.000
	TH	2.00	786	3,200	0.246 *	ICU: 0.700
	LT	1.00	29	1,600	0.018	LOS: B
Eastbound	RT	0.00	16	0	0.000	
	TH	2.00	133	3,200	0.046	
	LT	1.00	64	1,600	0.040 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	87	1,600	0.045	N-S(1): 0.460 *
	TH	2.00	1,001	3,200	0.313	N-S(2): 0.316
	LT	1.00	464	1,600	0.290 *	E-W(1): 0.212 *
Westbound	RT	1.00	235	1,600	0.002	E-W(2): 0.142
	TH	1.00	199	1,600	0.124	V/C: 0.672
	LT	2.00	388	2,560	0.152 *	Lost Time: 0.100
Northbound	RT	1.00	217	1,600	0.060	ITS: 0.000
	TH	2.00	544	3,200	0.170 *	ICU: 0.772
	LT	1.00	4	1,600	0.003	LOS: C
Eastbound	RT	0.00	14	0	0.000	
	TH	2.00	178	3,200	0.060 *	
	LT	1.00	29	1,600	0.018	

* - Denotes critical movement

Project Title: The District
Intersection: 7 - Figueroa St & Del Amo Blvd
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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	450	1,600	0.281 *	N-S(1): 0.259
	TH	2.00	389	1,600	0.243	N-S(2): 0.407 *
	LT	2.00	66	2,560	0.026	E-W(1): 0.330
Westbound	RT	0.00	185	0	0.000	E-W(2): 0.371 *
	TH	3.00	1,143	4,800	0.277 *	V/C: 0.778
	LT	2.00	440	2,560	0.172	Lost Time: 0.100
Northbound	RT	2.00	374	3,200	0.031	ITS: 0.000
	TH	2.00	744	3,200	0.233	
	LT	1.00	202	1,600	0.126 *	
Eastbound	RT	0.00	101	0	0.000	ICU: 0.878
	TH	3.00	658	4,800	0.158	
	LT	1.00	150	1,600	0.094 *	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	233	0	0.000	N-S(1): 0.232
	TH	2.00	594	3,200	0.258 *	N-S(2): 0.292 *
	LT	2.00	231	2,560	0.090	E-W(1): 0.544 *
Westbound	RT	0.00	145	0	0.000	E-W(2): 0.261
	TH	3.00	926	4,800	0.223	V/C: 0.836
	LT	2.00	585	2,560	0.229 *	Lost Time: 0.100
Northbound	RT	2.00	448	3,200	0.026	ITS: 0.000
	TH	2.00	455	3,200	0.142	
	LT	1.00	55	1,600	0.034 *	
Eastbound	RT	0.00	169	0	0.000	ICU: 0.936
	TH	3.00	1,345	4,800	0.315 *	
	LT	1.00	60	1,600	0.038	LOS: E

* - Denotes critical movement

Project Title: The District
Intersection: 8 - S Main St & E Del Amo Blvd
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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	130	0	0.000	N-S(1): 0.236 *
	TH	3.00	538	4,800	0.139	N-S(2): 0.215
	LT	1.00	78	1,600	0.049 *	E-W(1): 0.282
Westbound	RT	0.00	75	0	0.000	E-W(2): 0.434 *
	TH	3.00	1,572	4,800	0.343 *	V/C: 0.670
	LT	2.00	245	2,560	0.096	Lost Time: 0.100
Northbound	RT	1.00	248	1,600	0.107	ITS: 0.000
	TH	2.00	598	3,200	0.187 *	
	LT	1.00	122	1,600	0.076	
Eastbound	RT	1.00	39	1,600	0.000	ICU: 0.770
	TH	3.00	893	4,800	0.186	
	LT	1.00	146	1,600	0.091 *	LOS: C

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	156	0	0.000	N-S(1): 0.278 *
	TH	3.00	835	4,800	0.206	N-S(2): 0.267
	LT	1.00	194	1,600	0.121 *	E-W(1): 0.459 *
Westbound	RT	0.00	76	0	0.000	E-W(2): 0.414
	TH	3.00	1,402	4,800	0.308	V/C: 0.737
	LT	2.00	258	2,560	0.101 *	Lost Time: 0.100
Northbound	RT	1.00	304	1,600	0.140	ITS: 0.000
	TH	2.00	503	3,200	0.157 *	
	LT	1.00	98	1,600	0.061	
Eastbound	RT	1.00	120	1,600	0.044	ICU: 0.837
	TH	3.00	1,718	4,800	0.358 *	
	LT	1.00	169	1,600	0.106	LOS: D

* - Denotes critical movement

Project Title: The District
Intersection: 10 - S Avalon Blvd & E Del Amo Blvd
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	257	1,600	0.066	N-S(1): 0.262 *
	TH	3.00	619	4,800	0.129	N-S(2): 0.245
	LT	2.00	171	2,560	0.067 *	E-W(1): 0.304
Westbound	RT	1.00	101	1,600	0.030	E-W(2): 0.468 *
	TH	2.00	890	3,200	0.278 *	V/C: 0.730
	LT	1.00	180	1,600	0.113	Lost Time: 0.100
Northbound	RT	1.00	139	1,600	0.031	ITS: 0.000
	TH	3.00	938	4,800	0.195 *	ICU: 0.830
	LT	2.00	298	2,560	0.116	LOS: D
Eastbound	RT	1.00	138	1,600	0.028	
	TH	2.00	611	3,200	0.191	
	LT	1.00	304	1,600	0.190 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	326	1,600	0.123	N-S(1): 0.343 *
	TH	3.00	942	4,800	0.196	N-S(2): 0.301
	LT	2.00	347	2,560	0.136 *	E-W(1): 0.483 *
Westbound	RT	1.00	147	1,600	0.024	E-W(2): 0.398
	TH	2.00	756	3,200	0.236	V/C: 0.826
	LT	1.00	261	1,600	0.163 *	Lost Time: 0.100
Northbound	RT	1.00	210	1,600	0.050	ITS: 0.000
	TH	3.00	993	4,800	0.207 *	ICU: 0.926
	LT	2.00	268	2,560	0.105	LOS: E
Eastbound	RT	1.00	275	1,600	0.119	
	TH	2.00	1,023	3,200	0.320 *	
	LT	1.00	260	1,600	0.162	

* - Denotes critical movement

Project Title: The District
Intersection: 12 - Figueroa St & I-110 NB Ramps
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.80	415	2,881	0.144	N-S(1): 0.223
	TH	2.20	506	3,519	0.144 *	N-S(2): 0.408 *
	LT	0.00	0	0	0.000	E-W(1): 0.082
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.243 *
	TH	0.00	0	0	0.000 *	V/C: 0.651
	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	713	3,200	0.223	ICU: 0.751
	LT	2.00	677	2,560	0.264 *	LOS: C
Eastbound	RT	1.00	343	1,600	0.082	
	TH	0.00	0	0	0.000	
	LT	2.00	623	2,560	0.243 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.70	581	2,718	0.214 *	N-S(1): 0.149
	TH	3.00	786	4,800	0.164	N-S(2): 0.467 *
	LT	0.00	0	0	0.000	E-W(1): 0.020
Westbound	RT	0.00	0	0	0.000	E-W(2): 0.170 *
	TH	0.00	0	0	0.000 *	V/C: 0.637
	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	476	3,200	0.149	ICU: 0.737
	LT	2.00	648	2,560	0.253 *	LOS: C
Eastbound	RT	1.00	234	1,600	0.020	
	TH	0.00	0	0	0.000	
	LT	2.00	434	2,560	0.170 *	

* - Denotes critical movement

Project Title: The District
Intersection: 15 - Figueroa St & W Torrance Blvd
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	Y
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	439	1,600	0.106	N-S(1): 0.242 *
	TH	2.00	352	3,200	0.110	N-S(2): 0.225
	LT	1.00	81	1,600	0.051 *	E-W(1): 0.498 *
Westbound	RT	1.00	160	1,600	0.075	E-W(2): 0.000
	TH	2.00	516	3,200	0.161 *	V/C: 0.740
	LT	1.00	64	1,600	0.040	Lost Time: 0.100
Northbound	RT	1.00	78	1,600	0.029	ITS: 0.000
	TH	2.00	610	3,200	0.191 *	
	LT	1.00	184	1,600	0.115	
Eastbound	RT	0.00	164	0	0.000	ICU: 0.840
	TH	1.57	512	2,508	0.270	
	LT	1.43	618	1,833	0.337 *	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	381	1,600	0.033	N-S(1): 0.207 *
	TH	2.00	473	3,200	0.148	N-S(2): 0.203
	LT	1.00	157	1,600	0.098 *	E-W(1): 0.551 *
Westbound	RT	1.00	168	1,600	0.056	E-W(2): 0.000
	TH	2.00	452	3,200	0.141 *	V/C: 0.758
	LT	1.00	50	1,600	0.032	Lost Time: 0.100
Northbound	RT	1.00	72	1,600	0.029	ITS: 0.000
	TH	2.00	349	3,200	0.109 *	
	LT	1.00	88	1,600	0.055	
Eastbound	RT	0.00	163	0	0.000	ICU: 0.858
	TH	1.82	792	2,914	0.328	
	LT	1.18	618	1,509	0.410 *	LOS: D

* - Denotes critical movement

Project Title: The District
Intersection: 20 - S Main St & E 213th St
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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): 0.394 *
	TH	2.00	568	3,200	0.177	N-S(2): 0.180
	LT	1.00	124	1,600	0.078 *	E-W(1): 0.188 *
Westbound	RT	1.00	312	1,600	0.156	E-W(2): 0.156
	TH	0.00	0	0	0.000	
	LT	1.00	301	1,600	0.188 *	V/C: 0.582
Northbound	RT	0.00	166	0	0.000	Lost Time: 0.100
	TH	2.00	840	1,600	0.316 *	ITS: 0.000
	LT	0.00	4	1,600	0.003	
Eastbound	RT	0.00	0	0	0.000	ICU: 0.682
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	LOS: B

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	0	0	0.000	N-S(1): 0.554 *
	TH	2.00	912	3,200	0.285	N-S(2): 0.288
	LT	1.00	371	1,600	0.232 *	E-W(1): 0.147 *
Westbound	RT	1.00	171	1,600	0.000	E-W(2): 0.000
	TH	0.00	0	0	0.000	
	LT	1.00	235	1,600	0.147 *	V/C: 0.701
Northbound	RT	0.00	271	0	0.000	Lost Time: 0.100
	TH	2.00	755	1,600	0.322 *	ITS: 0.000
	LT	0.00	5	1,600	0.003	
Eastbound	RT	0.00	0	0	0.000	ICU: 0.801
	TH	0.00	0	0	0.000 *	
	LT	0.00	0	0	0.000	LOS: D

* - Denotes critical movement

Project Title: The District
Intersection: 22 - S Vermont Ave & W Carson St
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	229	1,600	0.096	N-S(1): 0.337 *
	TH	2.00	437	3,200	0.137	N-S(2): 0.263
	LT	1.00	122	1,600	0.076 *	E-W(1): 0.385
Westbound	RT	0.00	137	0	0.000	E-W(2): 0.393 *
	TH	3.00	1,297	4,800	0.299 *	V/C: 0.730
	LT	1.00	328	1,600	0.205	Lost Time: 0.100
Northbound	RT	1.00	173	1,600	0.006	ITS: 0.000
	TH	2.00	836	3,200	0.261 *	
	LT	1.00	201	1,600	0.126	
Eastbound	RT	0.00	91	0	0.000	ICU: 0.830
	TH	3.00	773	4,800	0.180	
	LT	1.00	151	1,600	0.094 *	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	272	1,600	0.119	N-S(1): 0.286
	TH	2.00	759	3,200	0.237 *	N-S(2): 0.313 *
	LT	1.00	225	1,600	0.141	E-W(1): 0.336 *
Westbound	RT	0.00	104	0	0.000	E-W(2): 0.309
	TH	3.00	890	4,800	0.207	V/C: 0.649
	LT	1.00	117	1,600	0.073 *	Lost Time: 0.100
Northbound	RT	1.00	210	1,600	0.095	ITS: 0.000
	TH	2.00	464	3,200	0.145	
	LT	1.00	122	1,600	0.076 *	
Eastbound	RT	0.00	216	0	0.000	ICU: 0.749
	TH	3.00	1,046	4,800	0.263 *	
	LT	1.00	163	1,600	0.102	LOS: C

* - Denotes critical movement

Project Title: The District
Intersection: 23 - Figueroa St & W Carson St
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	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	325	0	0.000	N-S(1): 0.239
	TH	2.00	392	3,200	0.224 *	N-S(2): 0.363 *
	LT	2.00	45	2,560	0.018	E-W(1): 0.236
Westbound	RT	0.00	47	0	0.000	E-W(2): 0.259 *
	TH	2.00	483	3,200	0.166 *	V/C: 0.622
	LT	1.00	40	1,600	0.025	Lost Time: 0.100
Northbound	RT	0.00	155	0	0.000	ITS: 0.000
	TH	2.00	553	3,200	0.221	ICU: 0.722
	LT	2.00	357	2,560	0.139 *	LOS: C
Eastbound	RT	1.00	449	1,600	0.211	
	TH	2.00	425	3,200	0.133	
	LT	1.00	149	1,600	0.093 *	

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	0.00	184	0	0.000	N-S(1): 0.196
	TH	2.00	456	3,200	0.200 *	N-S(2): 0.293 *
	LT	2.00	91	2,560	0.036	E-W(1): 0.322 *
Westbound	RT	0.00	34	0	0.000	E-W(2): 0.246
	TH	2.00	485	3,200	0.162	V/C: 0.615
	LT	1.00	72	1,600	0.045 *	Lost Time: 0.100
Northbound	RT	0.00	134	0	0.000	ITS: 0.000
	TH	2.00	377	3,200	0.160	ICU: 0.715
	LT	2.00	237	2,560	0.093 *	LOS: C
Eastbound	RT	1.00	518	1,600	0.277 *	
	TH	2.00	707	3,200	0.221	
	LT	1.00	135	1,600	0.084	

* - Denotes critical movement

Project Title: The District
Intersection: 25 - S Avalon Blvd & E Carson St
Description: Cumulative Base plus Project Alternative with Mitigations

Thru Lane:	1600 vph	N-S Split Phase :	N
Left Lane:	1600 vph	E-W Split Phase :	N
Double Lt Penalty:	20 %	Lost Time (% of cycle) :	10
ITS:	0 %	V/C Round Off (decs.) :	3
OLA Movements :			
FF Movements:			

Date/Time: AM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	108	1,600	0.041	N-S(1): 0.406 *
	TH	2.00	797	3,200	0.249	N-S(2): 0.291
	LT	1.00	255	1,600	0.159 *	E-W(1): 0.325 *
Westbound	RT	0.00	164	0	0.000	E-W(2): 0.214
	TH	2.00	350	3,200	0.161	V/C: 0.731
	LT	2.00	395	2,560	0.154 *	Lost Time: 0.100
Northbound	RT	1.00	518	1,600	0.247 *	ITS: 0.000
	TH	2.00	775	3,200	0.242	
	LT	1.00	67	1,600	0.042	
Eastbound	RT	0.00	67	0	0.000	ICU: 0.831
	TH	2.00	480	3,200	0.171 *	
	LT	2.00	135	2,560	0.053	LOS: D

Date/Time: PM PEAK HOUR

APPROACH	MVMT	LANES	VOLUME	CAPACITY	V/C	ICU ANALYSIS
Southbound	RT	1.00	225	1,600	0.105	N-S(1): 0.467 *
	TH	2.00	847	3,200	0.265	N-S(2): 0.326
	LT	1.00	341	1,600	0.213 *	E-W(1): 0.377 *
Westbound	RT	0.00	191	0	0.000	E-W(2): 0.267
	TH	2.00	434	3,200	0.195	V/C: 0.844
	LT	2.00	392	2,560	0.153 *	Lost Time: 0.100
Northbound	RT	1.00	478	1,600	0.222	ITS: 0.000
	TH	2.00	813	3,200	0.254 *	
	LT	1.00	97	1,600	0.061	
Eastbound	RT	0.00	73	0	0.000	ICU: 0.944
	TH	2.00	644	3,200	0.224 *	
	LT	2.00	185	2,560	0.072	LOS: E

* - Denotes critical movement

EXISTING PLUS PROJECT - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave **East-West Street:** Del Amo Blvd
Scenario: Existing plus Project Alternative
Count Date: 2016 **Analyst:** <Fehr & Peers> **Date:** 2017

		AM			PM		
		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
No. of Phases				2			2
Opposed Ø'ing: N/S-1, E/W-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		NB-- 0	SB-- 0	0	NB-- 0	SB-- 0	0
ATSAC-1 or ATSAC+ATCS-2?		EB-- 0	WB-- 0	0	EB-- 0	WB-- 0	0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	↵ Left	28	1	28	4	1	4
	↵↵ Left-Through		0			0	
	↵↵ Through	746	1	507	513	1	361
	↵↵ Through-Right		1			1	
	↵↵ Right	268	0	268	209	0	209
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
SOUTHBOUND	↵↵ Left	140.84	1	141	449.32	1	449
	↵↵ Left-Through		0			0	
	↵↵ Through	263	2	132	952	2	476
	↵↵ Through-Right		0			0	
	↵↵ Right	16	1	0	84	1	70
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
EASTBOUND	↵ Left	62	1	62	28	1	28
	↵↵ Left-Through		0			0	
	↵↵ Through	129.558	1	73	173.382	1	94
	↵↵ Through-Right		1			1	
	↵↵ Right	16	0	16	14	0	14
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
WESTBOUND	↵ Left	384.8	1	385	375.942	1	376
	↵↵ Left-Through		0			0	
	↵↵ Through	229.31	1	229	194.084	1	194
	↵↵ Through-Right		0			0	
	↵↵ Right	416.4	1	346	228.3	1	4
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 648		<i>North-South:</i> 810	
				<i>East-West:</i> 458		<i>East-West:</i> 470	
				<i>SUM:</i> 1106		<i>SUM:</i> 1280	
VOLUME/CAPACITY (V/C) RATIO:				0.737		0.853	
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.737		0.853	
LEVEL OF SERVICE (LOS):				C		D	

FUTURE PLUS PROJECT - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave **East-West Street:** Del Amo Blvd
Scenario: Future plus Project Alternative
Count Date: 2016 **Analyst:** <Fehr & Peers> **Date:** 2017

		AM			PM		
		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity				2			2
				0			0
		<i>NB--</i> 0		<i>SB--</i> 0	<i>NB--</i> 0	<i>SB--</i> 0	0
		<i>EB--</i> 0		<i>WB--</i> 0	<i>EB--</i> 0	<i>WB--</i> 0	0
				0			0
				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	↵ Left	29	1	29	4	1	4
	↵↔ Left-Through		0			0	
	→ Through	786	1	532	544	1	381
	↘ Through-Right		1			1	
	↘ Right	277	0	277	217	0	217
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
SOUTHBOUND	↵ Left	145.84	1	146	464.32	1	464
	↵↔ Left-Through		0			0	
	→ Through	275	2	138	1001	2	501
	↘ Through-Right		0			0	
	↘ Right	16	1	0	87	1	73
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
EASTBOUND	↵ Left	64	1	64	29	1	29
	↵↔ Left-Through		0			0	
	→ Through	133	1	75	178	1	96
	↘ Through-Right		1			1	
	↘ Right	16	0	16	14	0	14
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
WESTBOUND	↵ Left	398	1	398	388	1	388
	↵↔ Left-Through		0			0	
	→ Through	236	1	236	199	1	199
	↘ Through-Right		0			0	
	↘ Right	430.4	1	357	235.3	1	3
	↘↔ Left-Through-Right		0			0	
	↘↔ Left-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 678 <i>East-West:</i> 473 <i>SUM:</i> 1151			<i>North-South:</i> 845 <i>East-West:</i> 484 <i>SUM:</i> 1329
VOLUME/CAPACITY (V/C) RATIO:				0.767			0.886
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.767			0.886
LEVEL OF SERVICE (LOS):				C			D

EXISTING PLUS PROJECT WITH MITIGATION - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave **East-West Street:** Del Amo Blvd
Scenario: Existing plus Project Alternative Mitigation
Count Date: 2016 **Analyst:** <Fehr & Peers> **Date:** 2017

		AM			PM		
		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
No. of Phases Opposed Ø'ing: N/S-1, E/W-2 or Both-3? Right Turns: FREE-1, NRTOR-2 or OLA-3? ATSAC-1 or ATSAC+ATCS-2? Override Capacity				3			3
				0			0
		<i>NB--</i> 0	<i>SB--</i> 0	0	<i>NB--</i> 0	<i>SB--</i> 0	0
		<i>EB--</i> 0	<i>WB--</i> 0	0	<i>EB--</i> 0	<i>WB--</i> 0	0
				0			0
				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	↵ Left	28	1	28	4	1	4
	↵↵ Left-Through		0			0	
	↵↵ Through	746	2	373	513	2	257
	↵↵ Through-Right		0			0	
	↵↵ Right	268	1	162	209	1	106
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
SOUTHBOUND	↵↵ Left	140.84	1	141	449.32	1	449
	↵↵ Left-Through		0			0	
	↵↵ Through	263	2	132	952	2	476
	↵↵ Through-Right		0			0	
	↵↵ Right	16	1	0	84	1	70
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
EASTBOUND	↵ Left	62	1	62	28	1	28
	↵↵ Left-Through		0			0	
	↵↵ Through	#####	1	73	#####	1	94
	↵↵ Through-Right		1			1	
	↵↵ Right	16	0	16	14	0	14
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
WESTBOUND	↵ Left	385	2	212	376	2	207
	↵↵ Left-Through		0			0	
	↵↵ Through	229	1	229	194	1	194
	↵↵ Through-Right		0			0	
	↵↵ Right	416.4	1	346	228.3	1	4
	↵↵↵ Left-Through-Right		0			0	
	↵↵↵ Left-Right		0			0	
CRITICAL VOLUMES				<i>North-South:</i> 514			<i>North-South:</i> 706
				<i>East-West:</i> 408			<i>East-West:</i> 301
				<i>SUM:</i> 922			<i>SUM:</i> 1007
VOLUME/CAPACITY (V/C) RATIO:				0.647			0.707
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.647			0.707
LEVEL OF SERVICE (LOS):				B			C

FUTURE PLUS PROJECT WITH MITIGATION - CMA



Level of Service Worksheet (Circular 212 Method)



1/S #:
5

PROJECT TITLE: The District
North-South Street: S Vermont Ave **East-West Street:** Del Amo Blvd
Scenario: Future plus Project Alternative Mitigation
Count Date: 2016 **Analyst:** <Fehr & Peers> **Date:** 2017

		AM			PM		
				3			3
No. of Phases				0			0
Opposed Ø'ing: N/S-1, EW-2 or Both-3?				0			0
Right Turns: FREE-1, NRTOR-2 or OLA-3?		<i>NB--</i> 0	<i>SB--</i> 0	0	<i>NB--</i> 0	<i>SB--</i> 0	0
ATSAC-1 or ATSAC+ATCS-2?		<i>EB--</i> 0	<i>WB--</i> 0	0	<i>EB--</i> 0	<i>WB--</i> 0	0
Override Capacity				0			0
MOVEMENT		Volume	No. of Lanes	Lane Volume	Volume	No. of Lanes	Lane Volume
NORTHBOUND	Left	29	1	29	4	1	4
	Left-Through		0		0	0	
	Through	786	2	393	544	2	272
	Through-Right		0		0	0	
	Right	277	1	168	217	1	111
	Left-Through-Right		0		0	0	
SOUTHBOUND	Left	145.84	1	146	464.32	1	464
	Left-Through		0		0	0	
	Through	275	2	138	1001	2	501
	Through-Right		0		0	0	
	Right	16	1	0	87	1	73
	Left-Through-Right		0		0	0	
EASTBOUND	Left	64	1	64	29	1	29
	Left-Through		0		0	0	
	Through	133	1	75	178	1	96
	Through-Right		1		1	1	
	Right	16	0	16	14	0	14
	Left-Through-Right		0		0	0	
WESTBOUND	Left	398	2	219	388	2	213
	Left-Through		0		0	0	
	Through	236	1	236	199	1	199
	Through-Right		0		0	0	
	Right	430	1	357	235	1	3
	Left-Through-Right		0		0	0	
CRITICAL VOLUMES				<i>North-South:</i> 539			<i>North-South:</i> 736
				<i>East-West:</i> 421			<i>East-West:</i> 309
				SUM: 960			SUM: 1045
VOLUME/CAPACITY (V/C) RATIO:				0.674			0.733
V/C LESS ATSAC/ATCS ADJUSTMENT:				0.674			0.733
LEVEL OF SERVICE (LOS):				B			C

EXISTING PLUS PROJECT - HCM

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

09/12/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	859	63	83	885
Future Volume (Veh/h)	0	0	859	63	83	885
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	934	68	90	962
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1629	501			934	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1629	501			934	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			88	
cM capacity (veh/h)	81	515			729	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	623	379	90	481	481	
Volume Left	0	0	90	0	0	
Volume Right	0	68	0	0	0	
cSH	1700	1700	729	1700	1700	
Volume to Capacity	0.37	0.22	0.12	0.28	0.28	
Queue Length 95th (ft)	0	0	11	0	0	
Control Delay (s)	0.0	0.0	10.6	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			50.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: I-405 NB Off-Ramp & Figueroa St

09/12/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	197	292	919	0	0	716
Future Volume (Veh/h)	197	292	919	0	0	716
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	214	317	999	0	0	778
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1388	500			999	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1388	500			999	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	39			100	
cM capacity (veh/h)	134	517			689	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	214	317	500	500	389	389
Volume Left	214	0	0	0	0	0
Volume Right	0	317	0	0	0	0
cSH	134	517	1700	1700	1700	1700
Volume to Capacity	1.60	0.61	0.29	0.29	0.23	0.23
Queue Length 95th (ft)	382	102	0	0	0	0
Control Delay (s)	360.8	22.4	0.0	0.0	0.0	0.0
Lane LOS	F	C				
Approach Delay (s)	158.8		0.0		0.0	
Approach LOS	F					
Intersection Summary						
Average Delay			36.5			
Intersection Capacity Utilization			50.2%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection

Int Delay, s/veh 36.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	197	292	919	0	0	716
Future Vol, veh/h	197	292	919	0	0	716
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	-	-	-	-
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	214	317	999	0	0	778

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1388	499	0
Stage 1	999	-	-
Stage 2	389	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 134	517	0
Stage 1	317	-	0
Stage 2	654	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 134	517	-
Mov Cap-2 Maneuver	~ 134	-	-
Stage 1	317	-	-
Stage 2	654	-	-

Approach	WB	NB	SB
HCM Control Delay, s	158.4	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 134	517	-
HCM Lane V/C Ratio	- 1.598	0.614	-
HCM Control Delay (s)	- \$ 359.9	22.4	-
HCM Lane LOS	- F	C	-
HCM 95th %tile Q(veh)	- 15.3	4.1	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

09/12/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	762	115	592	1204
Future Volume (Veh/h)	0	0	762	115	592	1204
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	828	125	643	1309
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2831	476			828	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2831	476			828	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			20	
cM capacity (veh/h)	3	535			799	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	552	401	643	654	654	
Volume Left	0	0	643	0	0	
Volume Right	0	125	0	0	0	
cSH	1700	1700	799	1700	1700	
Volume to Capacity	0.32	0.24	0.80	0.39	0.39	
Queue Length 95th (ft)	0	0	215	0	0	
Control Delay (s)	0.0	0.0	25.2	0.0	0.0	
Lane LOS			D			
Approach Delay (s)	0.0		8.3			
Approach LOS						
Intersection Summary						
Average Delay			5.6			
Intersection Capacity Utilization			64.2%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: I-405 NB Off-Ramp & Figueroa St

09/12/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	77	131	771	0	0	1704
Future Volume (Veh/h)	77	131	771	0	0	1704
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	142	838	0	0	1852
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1764	419			838	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1764	419			838	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	76			100	
cM capacity (veh/h)	75	583			792	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	84	142	419	419	926	926
Volume Left	84	0	0	0	0	0
Volume Right	0	142	0	0	0	0
cSH	75	583	1700	1700	1700	1700
Volume to Capacity	1.12	0.24	0.25	0.25	0.54	0.54
Queue Length 95th (ft)	155	24	0	0	0	0
Control Delay (s)	236.6	13.2	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	96.2		0.0		0.0	
Approach LOS	F					
Intersection Summary						
Average Delay			7.5			
Intersection Capacity Utilization			64.2%		ICU Level of Service	C
Analysis Period (min)			15			

Intersection

Int Delay, s/veh 13.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	77	131	771	0	0	1704
Future Vol, veh/h	77	131	771	0	0	1704
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	-	-	-	-
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	84	142	838	0	0	1852

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1764	419	0
Stage 1	838	-	-
Stage 2	926	-	-
Critical Hdwy	7.54	6.94	-
Critical Hdwy Stg 1	6.54	-	-
Critical Hdwy Stg 2	6.54	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 53	583	0
Stage 1	327	-	0
Stage 2	289	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 53	583	-
Mov Cap-2 Maneuver	~ 53	-	-
Stage 1	327	-	-
Stage 2	289	-	-

Approach	WB	NB	SB
HCM Control Delay, s	178.1	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	-	53	583
HCM Lane V/C Ratio	-	1.579	0.244
HCM Control Delay (s)	-	458.7	13.2
HCM Lane LOS	-	F	B
HCM 95th %tile Q(veh)	-	7.8	1

Notes

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

FUTURE PLUS PROJECT - HCM

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

09/14/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	887	65	86	911
Future Volume (Veh/h)	0	0	887	65	86	911
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	964	71	93	990
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1680	518			964	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1680	518			964	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			87	
cM capacity (veh/h)	74	503			710	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	643	392	93	495	495	
Volume Left	0	0	93	0	0	
Volume Right	0	71	0	0	0	
cSH	1700	1700	710	1700	1700	
Volume to Capacity	0.38	0.23	0.13	0.29	0.29	
Queue Length 95th (ft)	0	0	11	0	0	
Control Delay (s)	0.0	0.0	10.8	0.0	0.0	
Lane LOS			B			
Approach Delay (s)	0.0		0.9			
Approach LOS						
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			51.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: I-405 NB Off-Ramp & Figueroa St

09/14/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	203	301	948	0	0	737
Future Volume (Veh/h)	203	301	948	0	0	737
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	221	327	1030	0	0	801
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1430	515			1030	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1430	515			1030	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	35			100	
cM capacity (veh/h)	125	505			670	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	221	327	515	515	400	400
Volume Left	221	0	0	0	0	0
Volume Right	0	327	0	0	0	0
cSH	125	505	1700	1700	1700	1700
Volume to Capacity	1.76	0.65	0.30	0.30	0.24	0.24
Queue Length 95th (ft)	422	114	0	0	0	0
Control Delay (s)	433.8	24.3	0.0	0.0	0.0	0.0
Lane LOS	F	C				
Approach Delay (s)	189.4		0.0		0.0	
Approach LOS	F					
Intersection Summary						
Average Delay			43.6			
Intersection Capacity Utilization			51.5%		ICU Level of Service	A
Analysis Period (min)			15			

Intersection

Int Delay, s/veh 43.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	203	301	948	0	0	737
Future Vol, veh/h	203	301	948	0	0	737
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	-	-	-	-
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	221	327	1030	0	0	801

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1431	515	0
Stage 1	1030	-	-
Stage 2	401	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 125	505	0
Stage 1	305	-	0
Stage 2	645	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 125	505	-
Mov Cap-2 Maneuver	~ 125	-	-
Stage 1	305	-	-
Stage 2	645	-	-

Approach	WB	NB	SB
HCM Control Delay, s	189.8	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 125	505	-
HCM Lane V/C Ratio	- 1.765	0.648	-
HCM Control Delay (s)	- \$ 435.1	24.3	-
HCM Lane LOS	- F	C	-
HCM 95th %tile Q(veh)	- 16.9	4.6	-

Notes

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

HCM Unsignalized Intersection Capacity Analysis

1: Figueroa St & I-405 SB On-Ramp

09/14/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑		↑	↑↑
Traffic Volume (veh/h)	0	0	785	118	610	1242
Future Volume (Veh/h)	0	0	785	118	610	1242
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	853	128	663	1350
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2918	490			853	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2918	490			853	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			15	
cM capacity (veh/h)	2	524			782	
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	569	412	663	675	675	
Volume Left	0	0	663	0	0	
Volume Right	0	128	0	0	0	
cSH	1700	1700	782	1700	1700	
Volume to Capacity	0.33	0.24	0.85	0.40	0.40	
Queue Length 95th (ft)	0	0	250	0	0	
Control Delay (s)	0.0	0.0	29.5	0.0	0.0	
Lane LOS			D			
Approach Delay (s)	0.0		9.7			
Approach LOS						
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization			65.9%		ICU Level of Service	C
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: I-405 NB Off-Ramp & Figueroa St

09/14/2017



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	79	135	795	0	0	1757
Future Volume (Veh/h)	79	135	795	0	0	1757
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	86	147	864	0	0	1910
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1819	432			864	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1819	432			864	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	74			100	
cM capacity (veh/h)	69	572			774	
Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	86	147	432	432	955	955
Volume Left	86	0	0	0	0	0
Volume Right	0	147	0	0	0	0
cSH	69	572	1700	1700	1700	1700
Volume to Capacity	1.25	0.26	0.25	0.25	0.56	0.56
Queue Length 95th (ft)	171	25	0	0	0	0
Control Delay (s)	292.0	13.5	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	116.3		0.0		0.0	
Approach LOS	F					
Intersection Summary						
Average Delay			9.0			
Intersection Capacity Utilization			65.9%		ICU Level of Service	C
Analysis Period (min)			15			

Intersection

Int Delay, s/veh 9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑↑			↑↑
Traffic Vol, veh/h	79	135	795	0	0	1757
Future Vol, veh/h	79	135	795	0	0	1757
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	-	-	-	-
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	86	147	864	0	0	1910

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1819	432	0
Stage 1	864	-	-
Stage 2	955	-	-
Critical Hdwy	6.84	6.94	-
Critical Hdwy Stg 1	5.84	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	3.32	-
Pot Cap-1 Maneuver	~ 69	572	0
Stage 1	373	-	0
Stage 2	334	-	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	~ 69	572	-
Mov Cap-2 Maneuver	~ 69	-	-
Stage 1	373	-	-
Stage 2	334	-	-

Approach	WB	NB	SB
HCM Control Delay, s	116.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBTWBLn1	WBLn2	SBT
Capacity (veh/h)	- 69	572	-
HCM Lane V/C Ratio	- 1.244	0.257	-
HCM Control Delay (s)	- 291.8	13.5	-
HCM Lane LOS	- F	B	-
HCM 95th %tile Q(veh)	- 6.8	1	-

Notes

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