

APPENDIX G
Traffic Impact Analysis

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CHICK-FIL-A AND IN-N-OUT AT 17TH STREET AND TUSTIN AVENUE IN COUNTY OF ORANGE TRAFFIC IMPACT ANALYSIS

County of Orange, California

March 06, 2019

Prepared for

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349

In-N-Out Burger
13502 Hamburger Lane
Baldwin Park, California 91706

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NOTE:

This Traffic Impact Analysis, entitled *Chick-fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange*, was originally written in 2016 with the first draft report being dated July 20, 2016, and reflects the year 2016 as existing conditions. The draft report was made available for the City of Santa Ana and the County of Orange to make any comments regarding the traffic impact analysis. After comments were received from the City of Santa Ana and the County of Orange, the traffic impact analysis was updated to incorporate the comments, leading to the report date of the traffic impact analysis being pushed past the original year of 2016. The Environmental Document also went on hold while the Project Team worked out an annexation with the Orange County Local Agency Formation Commission (LAFCO) to acquire and annex the unincorporated territory where the proposed projects will open. As a result, the final report date of the traffic impact analysis was pushed back to 2019. Although the existing conditions (2016) in the report does not correctly reflect the current year (2019), the proposed project site and surrounding conditions have not changed significantly. The surrounding areas around the proposed project site are considered to be “built-out”, and no major residential or commercial developments have taken place, nor are anticipated that may significantly affect the study area. It is assumed that updating the existing condition from 2016 to 2019 would not have any significant changes, and the results of the study would be similar. It is concluded that the existing conditions presented in the traffic impact analysis are still adequate. Similarly, updating the Opening Year would not substantially change the findings presented in the study. It is also noted that the ITE Trip Generation Manual, 9th Edition, was used to generate the project trips for this study. Although the ITE Trip Generation Manual, 10th Edition, is now available, the 10th Edition was released while traffic impact analysis was on going. The trip rates in the 9th Edition used to estimate the project traffic are also higher than the rates in the 10th Edition, which makes the current project trip generation estimates more conservative.

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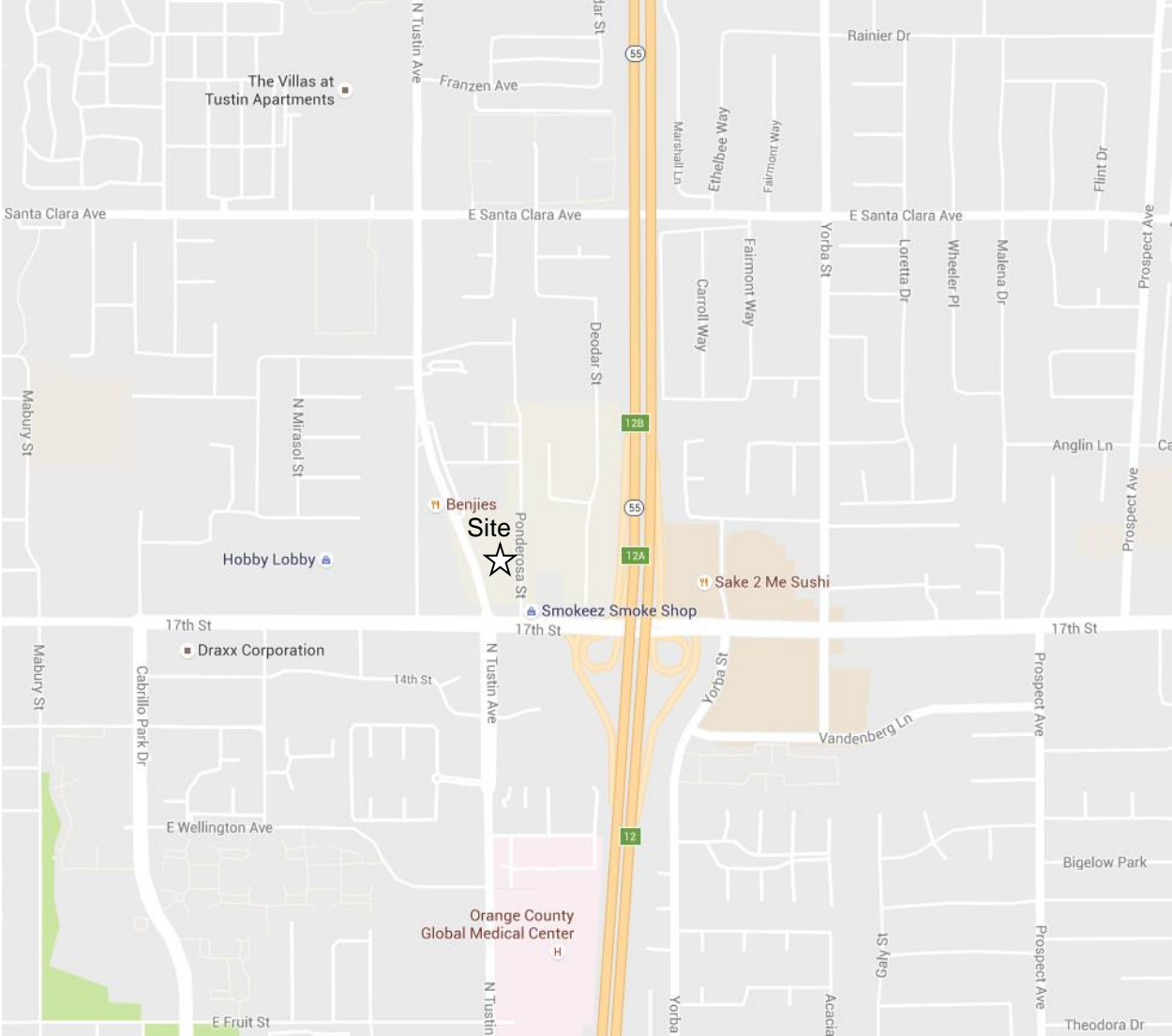
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1.0 INTRODUCTION

This study analyzes the forecast traffic conditions and impacts associated with the proposed Chick-fil-A and In-N-Out project located at the northeast corner of Tustin Avenue and 17th Street in the unincorporated County of Orange. The project site is located north of 17th Street between Tustin Avenue and Ponderosa Street. Exhibit 1 shows the regional project site location.

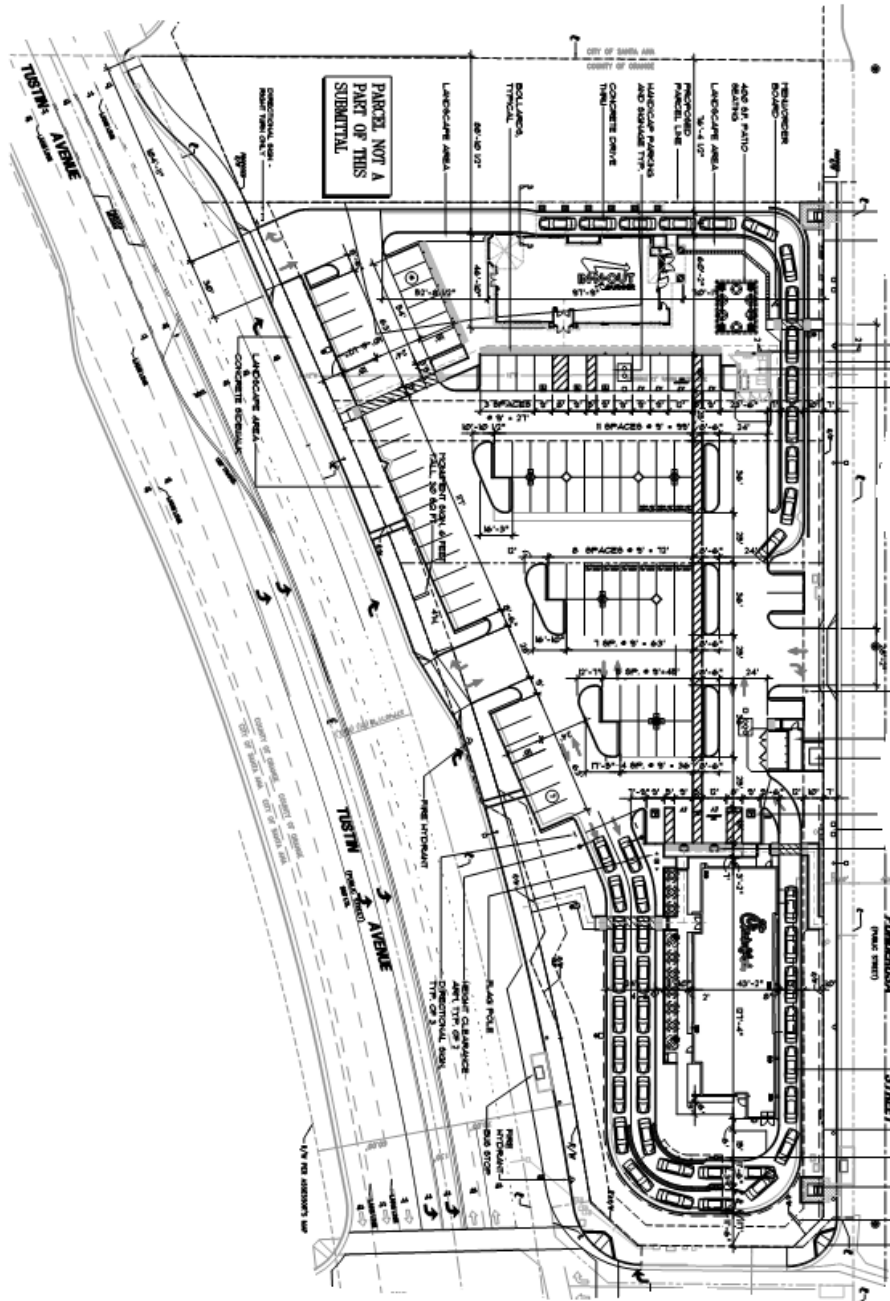
Exhibit 1 – Regional Study Area



1.1 Proposed Project

The project site is currently vacant. The project proposes to construct two fast food restaurants with drive-through lanes. The Chick-fil-A fast building will be 4,777 square feet with an additional 800 square feet of outdoor dining area for a total of 5,577 square feet, and it will have two drive-through lanes for a queue storage for 30 vehicles. The In-N-Out building will be 3,867 square feet with an outdoor patio area of 400 square feet for a total of 4,267 square feet, and it will have a drive-through lane for a queue storage of 14 vehicle. Exhibit 2 shows the project site plan.

Exhibit 2 – Project Site Plan



Not to Scale

The Chick-fil-A restaurant will operate 6 days a week, from 6:30 AM to 10:00 PM on Mondays through Saturdays, and it will be closed on Sundays. The In-N-Out restaurant will operate 7 days a week, from 10:00 AM to 1:00 AM on Sundays through Thursdays, and from 10:00 AM to 1:30 AM on Fridays and Saturdays. The proposed project is anticipated to be completed and operational in year 2018.

The project site has two access points on Tustin Avenue and one access point on Ponderosa Street. The north project driveway on Tustin Avenue is proposed to be a full access and it will be slightly offset from the existing driveway for Annie's Salon and Spa. The south project driveway on Tustin Avenue is a right-in/right-out only access that will be slightly offset from the existing driveway for the 7-Eleven store. The full access driveway on Ponderosa Street will be slightly offset from the existing driveway for the Ponderosa Plaza.

For the project driveway on Ponderosa Street, nominal amount of project traffic is anticipated to go north on Ponderosa Street because it is a low-volume residential street and the project will likely attract pedestrian traffic instead of vehicular traffic from adjacent residential neighborhood north of the project site. Therefore, even though the project driveway on Ponderosa Street is proposed to be a full access, the northbound left turn and southbound right turn traffic at the Ponderosa Street driveway will be very low which will not adversely impact the traffic circulation on Ponderosa Street. If City of Santa Ana prefers that the Ponderosa Street driveway be a limited access, the driveway may be limited to a northbound left-in/eastbound right-out only access which will not adversely impact the circulation of the project site.

1.2 Study Area

Exhibit 3 shows the study area that includes 16 intersections located within the County of Orange, City of Santa and City of Tustin. In coordination with County and City staff, the following 16 intersections and their respective jurisdictions have been identified for analysis in this traffic study:

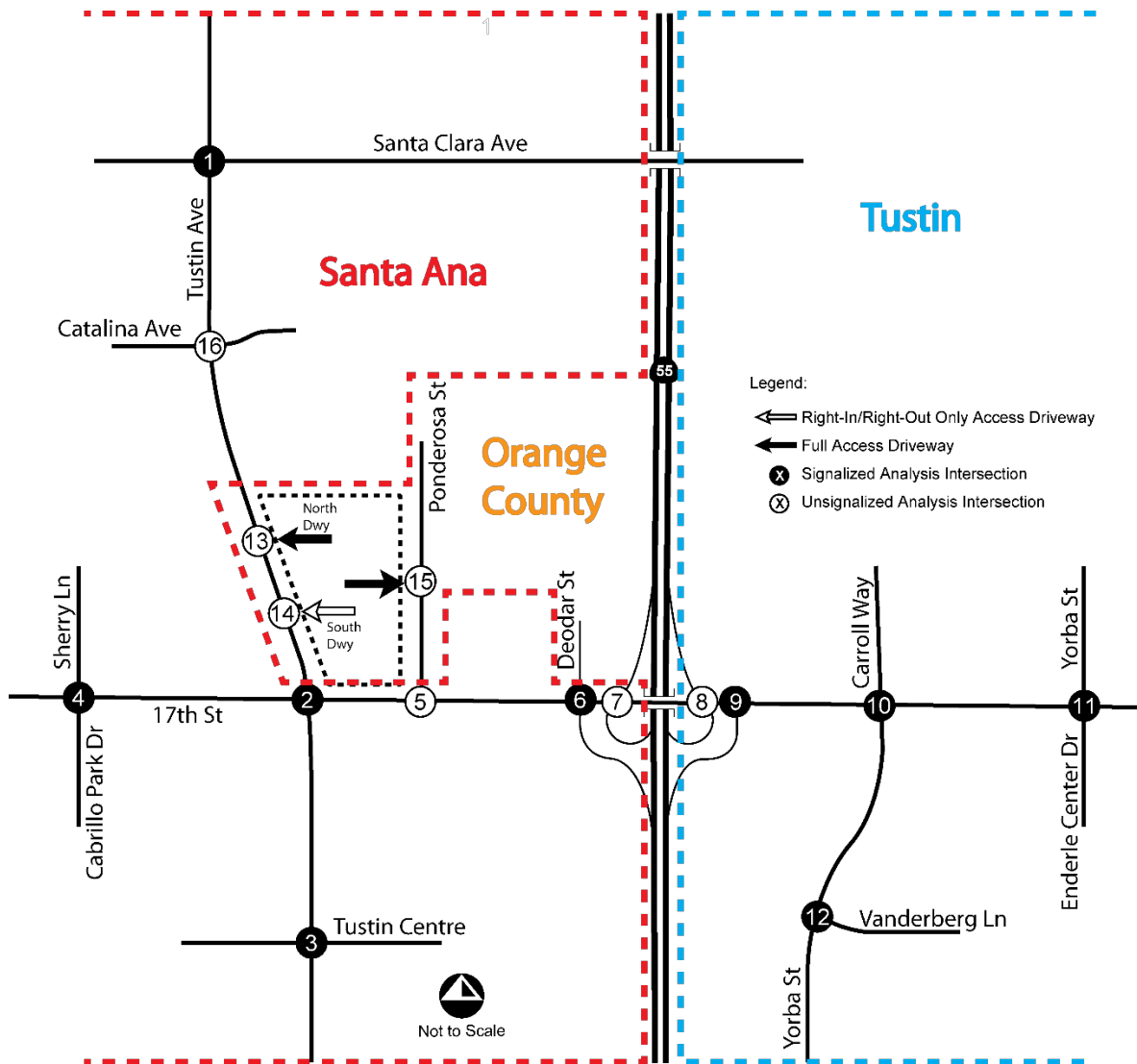
1. Tustin Avenue at Santa Clara Avenue – City of Santa Ana;
2. Tustin Avenue at 17th Street – City of Santa Ana;
3. Tustin Avenue at Tustin Centre – City of Santa Ana;
4. Sherry Lane / Cabrillo Park Avenue at 17th Street – City of Santa Ana;
5. Ponderosa Street at 17th Street – City of Santa Ana;
6. Deodar Street/SR-55 Southbound On-Ramp at 17th Street – City of Santa Ana;
7. SR-55 Southbound Off-Ramps at 17th Street – City of Santa Ana;
8. SR-55 Northbound On-Ramps at 17th Street – City of Tustin;
9. Mimi's Café Driveway / SR-55 Northbound Off-Ramp at 17th Street – City of Tustin;
10. Carroll Way / Yorba Street at 17th Street – City of Tustin;
11. Yorba Street / Enderle Center Drive at 17th Street – City of Tustin;
12. Yorba Street at Vandenberg Lane – City of Tustin;
13. Tustin Avenue at Annie's Salon & Spa Driveway / the North Project Driveway (future) – County of Orange;
14. Tustin Avenue at 7-Eleven Driveway / the South Project Driveway (future) – County of Orange; and
15. Ponderosa Street at Project Driveway (future) – County of Orange.
16. Tustin Avenue at Catalina Avenue – City of Santa Ana

1.3 Analysis Scenarios

The study intersections are analyzed for the following study scenarios:

- Existing (2016) Conditions;
- Existing plus Project (EP) Conditions;
- Opening Year 2018 without Project (2018nP) Conditions;
- Opening Year 2018 with Project (2018wP) Conditions;
- Buildout 2035 without Project (2035nP) Conditions; and
- Buildout 2035 with Project (2035wP) Conditions.

Exhibit 3 – Project Study Area



1.4 Analysis Time Period

Traffic studies usually analyze the time periods of typical weekday morning (AM) and afternoon (PM) peak hour conditions. However, the Saturday Mid-Day (MD) conditions is included in this analysis to evaluate the project’s impact during the weekends. The study area intersections are analyzed for the following time periods:

- Weekday AM Peak Hour – Peak hour within 6:00 AM and 9:00 AM;
- Weekday PM Peak Hour – Peak hour within 3:00 PM and 7:00 PM; and
- Saturday Mid-Day Peak Hour – Peak hour within 11:00 AM and 2:00 PM.

2.0 ANALYSIS METHODOLOGY

This section describes the intersection analysis, performance criteria, thresholds of significance, and traffic volume forecast methodologies utilized in this traffic analysis.

2.1 Intersection Analysis Methodology

Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the capacity of the intersection and the volume of traffic using the intersection. Level of service (LOS) is commonly used as a qualitative description of intersection operation and is based on the capacity of the intersection and the volume of traffic using the intersection. The Intersection Capacity Utilization (ICU) analysis methodology is utilized to determine the operating LOS of the signalized intersections. For un-signalized intersections, the Highway Capacity Manual (HCM) analysis methodology is utilized to determine the operating.

2.1.1 Intersection Capacity Utilization (ICU) Method for Signalized Intersection

The signalized intersections are analyzed using the Intersection Capacity Utilization (ICU) method. The ICU technique estimates the volume-to-capacity (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 or capacity of the intersection movements. It should be noted that the ICU method assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

The ICU value translates to a LOS estimate, which is a relative measure of the intersection performance. The grade scales of LOS have been defined with the corresponding ICU value range as shown in Table 1. The ICU value is the sum of the critical volume-to-capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

Table 1 – Level of Service for Signalized Intersection

Level of Service	Intersection Capacity Utilization (ICU)	
	Volume/Capacity (V/C)	Description
A	≤ 0.600	Excellent
B	> 0.601 ≤ 0.700	Very Good
C	> 0.700 to ≤ 0.800	Good
D	> 0.800 to ≤ 0.900	Fair
E	> 0.900 to ≤ 1.000	Poor
F	> 1.000	Failure

ICU calculations use a lane capacity of 1,700 vehicles per hour (vph) for left-turn, through and right-turn lanes, and a capacity of 1,955 vph for right turn lanes with right-turn overlap phasing. A 5% clearance interval is included in the analysis calculations based on Orange County Congestion Management (CMP) requirements. For City of Santa Ana intersections, a 1,600 vph capacity for left turns is used.

2.1.2 Highway Capacity Manual (HCM) Method for Unsignalized Intersection

The 2010 HCM analysis methodology describes the operation of an unsignalized intersection using a range of LOS from LOS A (free-flow conditions) to LOS F (severely congested conditions), based on the corresponding ranges of stopped delay experienced per vehicle for unsignalized intersections shown in Table 2.

Table 2 – Level of Service for Un-Signalized Intersection

Level of Service	Delay (seconds/vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10.0	≤ 10.0
B	> 10.0 to ≤ 20.0	> 10.0 to ≤ 15.0
C	> 20.0 to ≤ 35.0	> 15.0 to ≤ 25.0
D	> 35.0 to ≤ 55.0	> 25.0 to ≤ 35.0
E	> 55.0 to ≤ 80.0	> 35.0 to ≤ 50.0
F	> 80.0	> 50.0

Source: Highway Capacity Manual (HCM)

Level of service is based on the average stopped delay per vehicle for all movements of signalized intersections and all-way stop-controlled intersections; for one-way or two-way stop-controlled intersections, LOS is based on the worst stop-controlled approach.

HCM analysis has also been conducted for the two signalized intersections on 17th Street at the SR-55 freeway ramp intersections (Intersections #7 and #10).

2.2 Peak Hour Performance Criteria

The County of Orange has established an intersection operation standard of LOS D or better. City of Santa Ana and City of Tustin also have a similar standard.

2.3 Traffic Impact Thresholds of Significance

County of Orange

Traffic impacts at an intersection are to be considered “significant” when any of the following changes in the volume-to-capacity (V/C) ratios occur between the “without project” and the “with project” conditions as listed in Table 3, and operating at LOS E or worse:

Table 3 – Traffic Impact Threshold

LOS Without Project	V/C Ratio Project Difference
LOS E or F	> 0.01

Source: Orange County CMP Preparation Guidelines.

Mitigation must be identified for intersections that show a significant project impact per the thresholds show in Table 2 and operating at LOS E or worse. The LOS with mitigation should be improved to the “Pre-Project” conditions. The following study intersections are located within the County of Orange:

13. Tustin Avenue at Annie’s Salon & Spa Driveway / the North Project Driveway (future) – County of Orange;
14. Tustin Avenue at 7-Eleven Driveway / the South Project Driveway (future) – County of Orange; and
15. Ponderosa Street at Project Driveway (future) – County of Orange.

City of Santa Ana

The Circulation and Land use Elements of the City of Santa Ana General Plan for intersections located outside of Major Development Areas (MDA), set Level of Service D as the threshold for an acceptable service level. The City of Santa Ana considers Level of Service E as the maximum acceptable service level for intersections located within an MDA. These criteria are consistent with Measure M target levels, and are either more stringent than, or meet Congestion Management Plan (CMP) criteria which designates LOS E as the minimum acceptable level of service. The following study intersections are located within the City of Santa Ana:

1. Tustin Avenue at Santa Clara Avenue;
2. Tustin Avenue at 17th Street;
3. Tustin Avenue at Tustin Centre;
4. Sherry Lane / Cabrillo Park Avenue at 17th Street;
5. Ponderosa Street at 17th Street;
6. Deodar Street/SR-55 Southbound On-Ramp at 17th Street;
7. SR-55 Southbound Off-Ramps at 17th Street; and
16. Tustin Avenue at Catalina Avenue.

A project is considered to have a significant traffic impact at an intersection if traffic level of service deteriorates to an unacceptable level of service (i.e., Level of Service E or F at intersections outside of MDA, Level of Service F within MDA with the addition of project traffic. For study intersections located outside of MDA, if the intersection is expected to operate at an unacceptable level of service (level of service E or F) under base conditions (conditions without the project), measures to achieve acceptable levels of service at the intersections should be recommended. For study intersections located within MDA, if the intersection is expected to operate at unacceptable levels of service (intersection level of service F at Santa Ana intersections within MDA) under base conditions (conditions without the project), improvement and recommendations are requested to achieve acceptable levels of service.

It is noted that based on Exhibit A-5 of the City of Santa Ana General Plan Land Use Element, intersection #5, intersection #6, and intersection #7 are part of the Tustin Avenue Corridor Major Development Area. These Major Development Areas are expected to generate the highest level of development activity in the City as centers of commerce.

City of Tustin

The City of Tustin has determined that Level of Service D (peak hour ICU \leq 0.90 for signalized intersections, stop delay \leq 25 seconds for un-signalized intersections) is the minimum acceptable level of service for peak hour operation in the City. For levels of service poorer than the acceptable level of service, mitigation of the project contribution is required to bring the intersection back to

an acceptable level of service or to no-project conditions. The following study intersections are located within the City of Tustin:

8. SR-55 Northbound On-Ramps at 17th Street;
9. Mimi's Café Driveway / SR-55 Northbound Off-Ramp at 17th Street;
10. Carroll Way / Yorba Street at 17th Street;
11. Yorba Street / Enderle Center Drive at 17th Street; and
12. Yorba Street at Vandenberg Lane – City of Tustin.

Thresholds of significance are set by the Orange County Congestion Management Plan for analysis of impacts beyond the lead agency's jurisdiction. If the project contribution is greater than 0.03 at CMP intersections (the impact threshold specified in the CMP), and if the location is at Level of Service E or poorer, the impact is significant. If the location is at Level of Service E or poorer and a mitigation measure is feasible to improve the level of service to Level D or better, the measure is suggested for cumulative impacts. However, if the contribution of the project is less than 0.03 the project is not deemed to impact the location.

3.0 EXISTING CONDITIONS

This section describes the existing conditions of the study area including the existing roadway description, intersection geometry and traffic volumes.

3.1 Roadway Description

Exhibit 4 illustrates the existing intersection controls and lane geometry for the study area. The characteristics of the roadway system in the vicinity of the project site are described below:

17th Street is a six-lane divided roadway with raised median trending in an east-west direction. The posted speed limit is 40 miles per hour on 17th Street. On-street parking is prohibited. There are no bike lanes on 17th Street within the study area.

Tustin Avenue, trending in a north-south direction, is a six-lane divided roadway with a raised center median south of 17th Street; and a five-lane (two northbound and three southbound lanes) divided roadway with a two-way left-turn lane between 17th Street and Catalina Avenue; and a six lane divided roadway with a two-way left-turn lane north of Catalina Avenue. The posted speed limit is 40 miles per hour on Tustin Avenue. On-street parking is prohibited. There are no bike lanes on Tustin Avenue within the study area.

Ponderosa Street is a two-lane undivided roadway trending in a north-south direction. There is no posted speed limit on Ponderosa Avenue. On-street parking is permitted on both sides of the street. There are no bike lanes on Ponderosa Street within the study area.

Deodar Street is a two-lane undivided residential street with a yellow centerline stripe trending in a north-south direction. There is no posted speed limit on Ponderosa Avenue. On-street parking is permitted on both sides of the street. There are no bike lanes on Ponderosa Street within the study area.

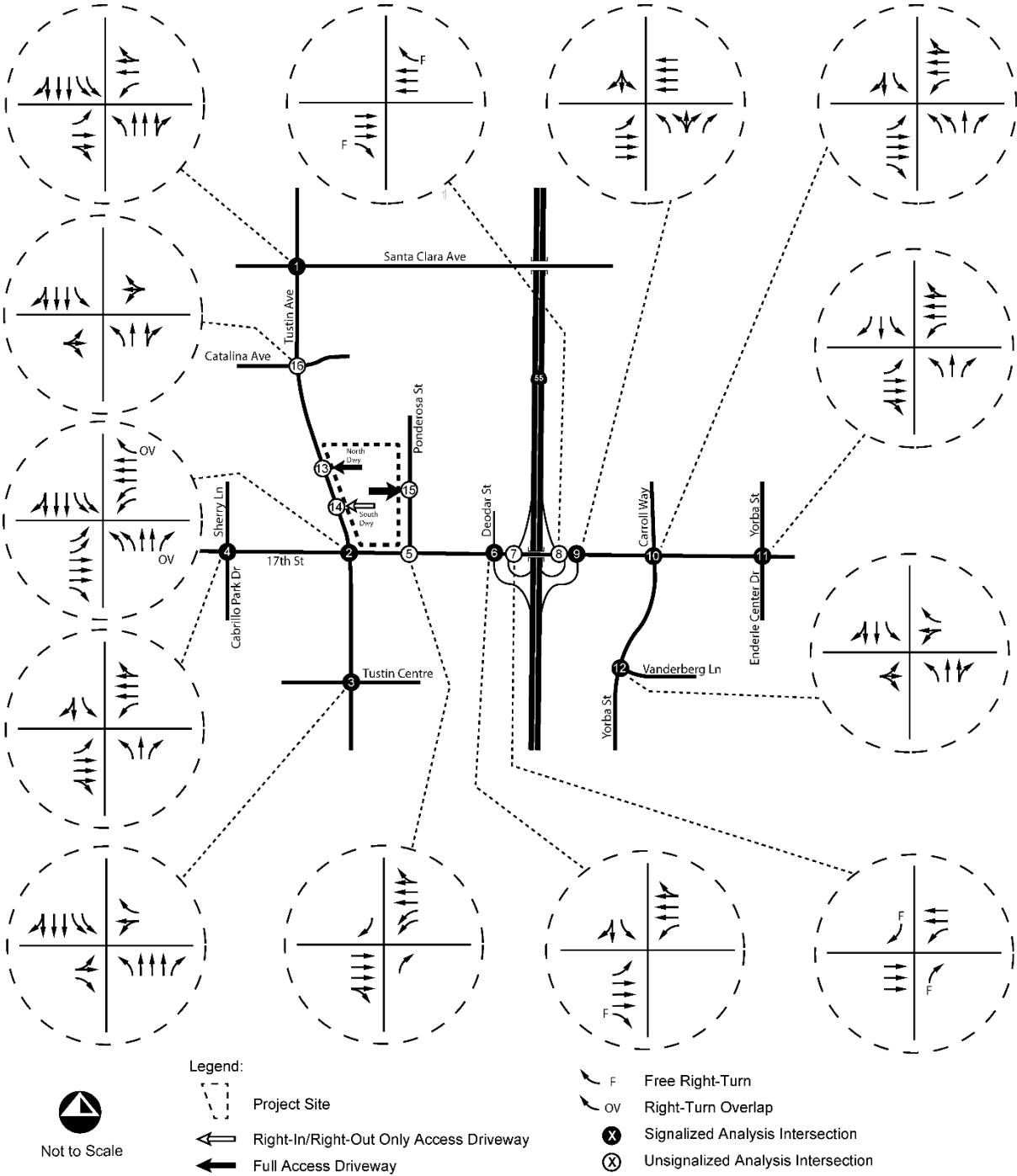
Santa Clara Avenue is a four-lane divided roadway with a two-way left-turn lane trending in an east-west direction. The posted speed limit is 40 miles per hour on Santa Clara Avenue. On-street parking is prohibited on Santa Clara Avenue. There are no bike lanes on Santa Clara Avenue within the study area.

Yorba Street, south of 17th Street, is a four-lane divided roadway with a two-left turn lane trending in a north-south direction. The posted speed limit is 40 miles per hour on Yorba Street. On-street parking is prohibited on Yorba Street. There are no bike lanes on Yorba Street within the study area.

Carroll Way is a two-lane undivided roadway with a double yellow centerline stripe trending in a north-south direction. There is no posted speed limit on Carroll Way. On-street parking is prohibited on Carroll Way. There are no bike lanes on Carroll Way within the study area.

Yorba Street, north of 17th Street, is a four-lane undivided roadway with a double yellow centerline stripe trending in a north-south direction. The posted speed limit is 40 miles per hour on Yorba Street. On-street parking is generally permitted on Yorba Street except at several locations with red curbs. There are no bike lanes on Yorba Street within the study area.

Exhibit 4 – Existing Intersection Geometry



Enderle Center Drive is a two-lane divided roadway with a two-way left turn lane trending in a north-south direction. There is no posted speed on Enderle Center Drive. On-street parking is generally permitted on Enderle Center Drive. There are no bike lanes on Enderle Center Drive within the study area.

Vandenberg Lane is a two-lane undivided roadway with a double yellow centerline stripe trending in an east-west direction. The posted speed limit is 35 miles per hour on Vandenberg Lane. On-street parking is permitted. There are no bike lanes on Vandenberg Lane within the study area.

Catalina Avenue is a two-lane divided roadway on the east of Tustin Avenue, and a two-lane undivided roadway on the west side of Tustin Avenue. Catalina Avenue trends in an east-west direction. The posted speed limit is 25 miles per hour. Street parking is permitted west of Tustin Avenue.

Sherry Lane/Cabrillo Park Drive is a four-lane divided roadway south of 17th Street (Cabrillo Park Drive), and a two-lane undivided roadway north of 17th Street (Sherry Lane); trending in a north-south direction. The posted speed limit on Cabrillo Park Drive is 35 miles per hour. There is no posted speed limit on Sherry Lane. Street parking is permitted on Sherry Lane, while it is prohibited on Cabrillo Park Drive.

Tustin Centre provides access to office buildings to the east, and provides access to commercial/retail/restaurant buildings to the west. There is no posted speed limit on Tustin Centre. Street parking is prohibited.

SR-55 On/Off Ramps provides access to SR-55 along 17th Street and is a partial cloverleaf configuration. The SR-55 Southbound Off-ramps and SR-55 Northbound On-Ramps are unsignalized intersections. The SR-55 Southbound On-ramp and SR-55 Northbound Off-ramp are signalized intersections.

3.2 Existing Conditions Traffic Volumes

To determine the existing operation of the study intersections, weekday morning (AM), weekday afternoon (PM) and Saturday Mid-Day (MD) peak hour intersection movement counts were collected in June of 2016. Weekday morning peak period intersection counts were collected from 6:00 AM to 9:00 AM, weekday afternoon peak period intersection counts were collected from 3:00 PM to 7:00 PM, and Saturday Mid-Day peak period intersection counts were collected from 11:00 AM to 2:00 PM. The counts used in this analysis were taken from the highest hour within the peak period counted. Exhibit 5 shows existing conditions, weekday AM and PM peak hour volumes at the study intersections. Exhibit 6 shows existing conditions Saturday MD peak hour volumes. Traffic count data sheets are included in Appendix A of this report. 24-hour roadway segment counts were also collected on 17th Street and Tustin Avenue (see Appendix A).

3.3 Existing Conditions Intersection Analysis

Table 4 summarizes the intersection LOS analysis results for existing weekday AM, weekday PM and Saturday MD peak hour conditions. Appendix B includes the existing conditions intersection operations analysis worksheets. As shown in Table 4, all study area intersections are operating at LOS D or better, except at the following locations:

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie's Salon & Spa Driveway – LOS F (PM)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

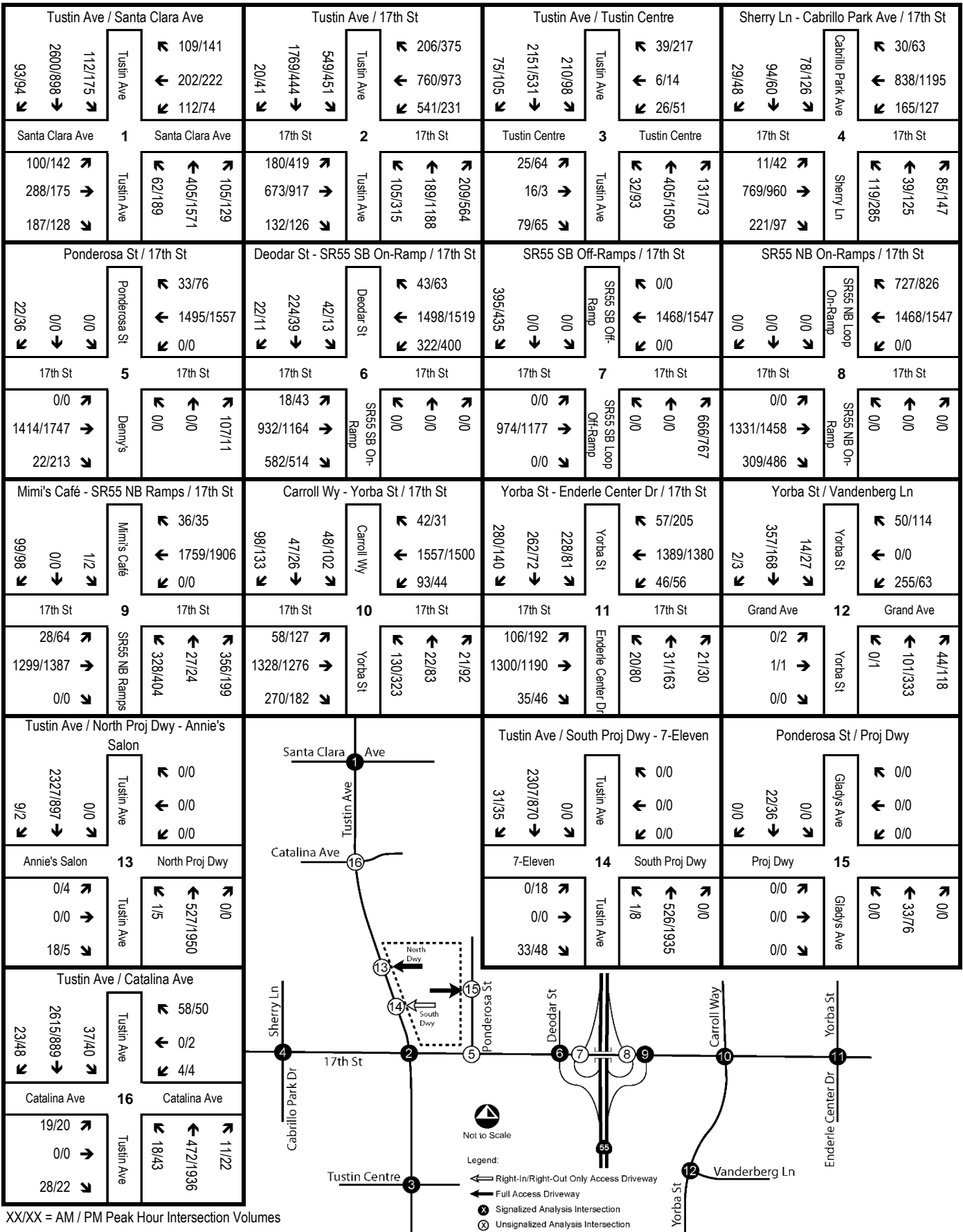


Exhibit 5

Existing Weekday AM and PM Peak Hour Volumes

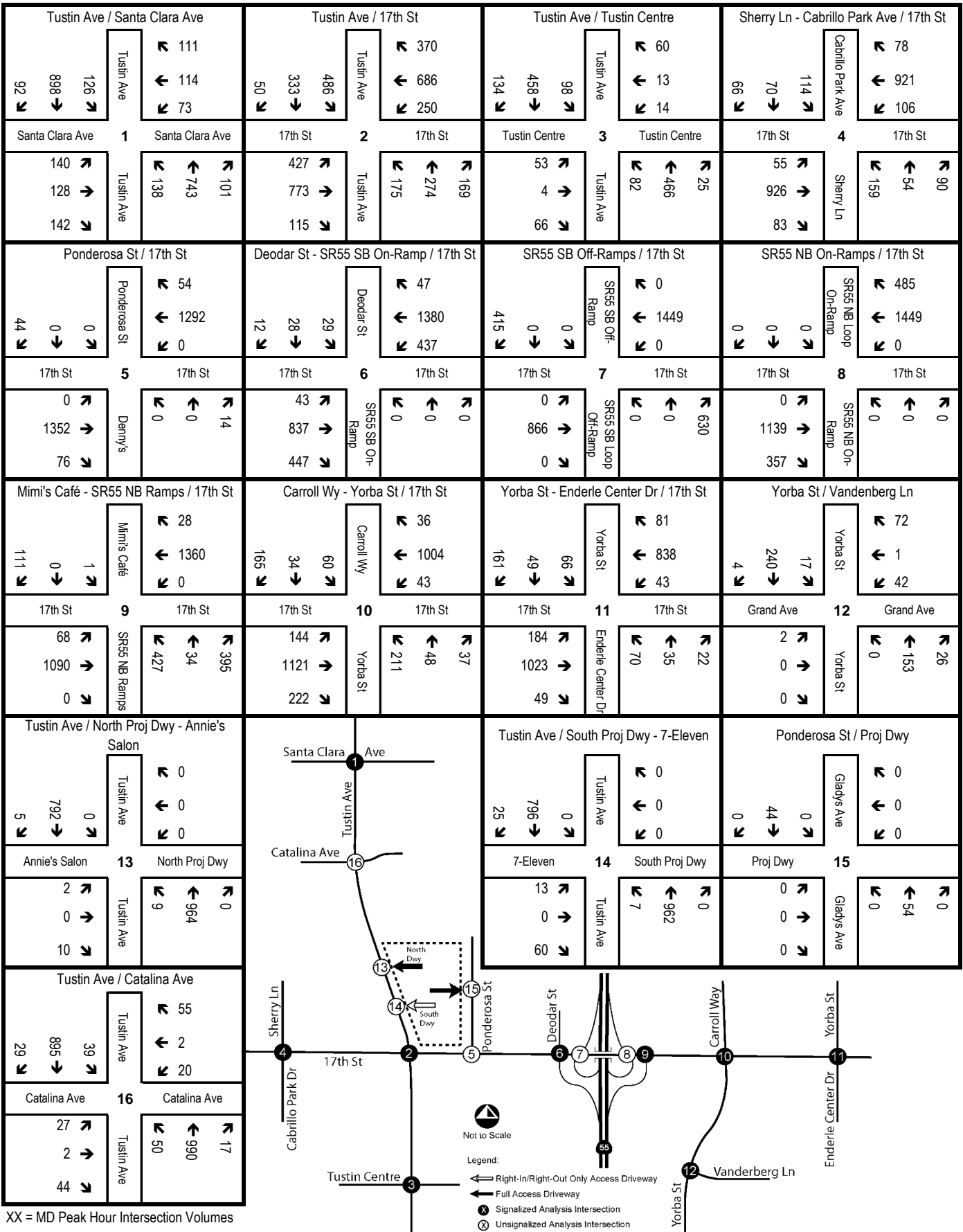


Exhibit 6

Existing Saturday MD Peak Hour Volumes

**Table 4
Existing Conditions Intersection Analysis Summary**

Intersection			Existing Conditions					
			AM		PM		MD	
No.	Name	Type*	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS
1	Tustin Ave / Santa Clara Ave	TS	0.851	D	0.652	B	0.486	A
2	Tustin Ave / 17th St	TS	0.757	C	0.921	E	0.563	A
3	Tustin Ave / Tustin Centre	TS	0.593	A	0.578	A	0.296	A
4	Sherry Ln - Cabrillo Park Ave / 17th St	TS	0.517	A	0.607	B	0.506	A
5	17th St / Ponderosa St Denny's Dwy	CSS	12.7	B	13.7	B	12.1	B
		CSS	12.0	B	13.0	B	10.9	B
6	Deodar St - SR55 SB On-Ramp / 17th St o HCM Analysis	TS	0.614	B	0.581	A	0.617	B
		TS	17.0	B	12.1	B	13.7	B
7	SR55 SB Off-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A
8	SR55 NB On-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A
9	Mimi's Café - SR55 NB Ramps / 17th St o HCM Analysis	TS	0.511	A	0.678	B	0.577	A
		TS	20.6	C	21.7	C	24.1	C
10	Carroll Wy - Yorba St / 17th St	TS	0.535	A	0.655	B	0.573	A
11	Yorba St - Enderle Center Dr / 17th St	TS	0.585	A	0.632	B	0.515	A
12	Yorba St / Vandenberg Ln	TS	0.355	A	0.279	A	0.186	A
13	Tustin Ave / Annie's	CSS	29.5	D	63.5	F	15.7	C
14	Tustin Ave / 7-Eleven	CSS	38.5	E	14.0	B	13.2	B
15	Ponderosa St / Proj Dwy	CSS						
16	Tustin Ave / Catalina Ave	CSS	1641.1	F	357.9	F	75.3	F

Note

- * Intersection Type: TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop; UNC = Uncontrolled
- ¹ Signalized Intersections: Intersection Capacity Utilization (ICU) Analysis Method, Volume/Capacity (V/C) Ratio.
Unsignalized Intersections: Highway Capacity Manual (HCM) Analysis Method, Average Delay (seconds per vehicle).

4.0 PROJECT TRAFFIC

This section presents the methodology behind the project traffic generation, distribution and assignment.

The project site is currently vacant. The project proposes to construct two fast food restaurants with drive-through lanes. The Chick-fil-A fast building will be 4,777 square feet with an additional 800 square feet of outdoor dining area for a total of 5,577 square feet, and it will have two drive-through lanes for a queue storage for 30 vehicles. The In-N-Out building will be 3,867 square feet with an outdoor patio area of 400 square feet for a total of 4,267 square feet, and it will have a drive-through lane for a queue storage of 14 vehicle.

The Chick-fil-A restaurant will operate 6 days a week, from 6:30 AM to 10:00 PM on Mondays through Saturdays, and it will be closed on Sundays. The In-N-Out restaurant will operate 7 days a week, from 10:00 AM to 1:00 AM on Sundays through Thursdays, and from 10:00 AM to 1:30 AM on Fridays and Saturdays.

The project site has two access points on Tustin Avenue and one access point on Ponderosa Street. The north project driveway on Tustin Avenue is proposed to be a full access and it will be slightly offset from the existing driveway for Annie's Salon and Spa. The south project driveway on Tustin Avenue is a right-in/right-out only access that will be slightly offset from the existing driveway for the 7-Eleven store. The full access driveway on Ponderosa Street will be slightly offset from the existing driveway for the Ponderosa Plaza.

For the project driveway on Ponderosa Street, nominal amount of project traffic is anticipated to go north on Ponderosa Street because it is a low-volume residential street and the project will likely attract pedestrian traffic instead of vehicular traffic from adjacent residential neighborhood north of the project site. Therefore, even though the project driveway on Ponderosa Street is proposed to be a full access, the northbound left turn and southbound right turn traffic at the Ponderosa Street driveway will be very low which will not adversely impact the traffic circulation on Ponderosa Street. If City of Santa Ana prefers that the Ponderosa Street driveway be a limited access, the driveway may be limited to a northbound left-in/eastbound right-out only access which will not adversely impact the circulation of the project site.

4.1 Project Trip Generation

To calculate trips forecast to be generated by the proposed project, trip generation rates published in the *Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition, 2012)* for "fast-food restaurant with drive-through window" are used to calculate the number of trips that will be generated by the project. Table 5 summarizes the project traffic generation. Weekday morning (AM) peak period data are not presented for the proposed In-N-Out restaurant because it will not serve breakfast and will not be operational during the weekday AM peak period.

As documented in the *ITE Trip Generation Manual (9th Edition, 2012)*, a pass-by trip reduction adjustment is applicable to fast-food restaurant land uses located along busy arterial highways attracting vehicle trips already on the roadway; this is particularly the case when the roadway is experiencing peak operating conditions. For example, during the weekday PM peak hour, a motorist already traveling along Tustin Avenue or 17th Street between work and home or other destinations may stop and eat at the proposed restaurants before continuing to his intended

destination. A pass-by discount under this example would reduce or eliminate both the inbound trip and the outbound trip from the surrounding roadway circulation system since the vehicle was already traveling on the roadway. Without the pass-by trip discount, two trips would be generated: an inbound trip to the project site, and an outbound trip from the project site. For Fast Food w/ Drive Thru (ITE Code 934) sites, weekday AM and PM peak hour pass-by trip reduction percentages of 49% and 50% have been researched and calculated in Table F.31 and Table F.32 in the *ITE Trip Generation Manual* (9th Edition, 2012). However, to be conservative, a 30% pass-by trip reduction will be used to estimate the project traffic, which will reduce the amount of trip credit taken, compared to 49% and 50% allowed.

Additionally, although the ITE Trip Generation Manual does not provide pass-by trip reduction for Saturday MD peak hour conditions, it is reasonable to assume that some percentage of the forecast Saturday MD peak hour trip generation will attract trips already on the roadway. A 30% pass-by trip reduction is also applied to Saturday MD conditions.

Table 5 – Project Trip Generation

Trip Rates													
Project				Daily	Weekday AM Peak			Weekday PM Peak			Saturday Mid-Day		
No.	Land Use	Code ¹	Unit ²		Total	In%	Out%	Total	In%	Out%	Total	In%	Out%
1	Fast Food w/ Drive-Thru	ITE 934	TSF	496.12	45.42	51%	49%	32.65	52%	48%	59.00	51%	49%

Traffic Generation													
Project			Daily	Weekday AM Peak			Weekday PM Peak			Saturday Mid-Day			
No.	Land Use	Quantity ²		Total	In	Out	Total	In	Out	Total	In	Out	
CFA	Fast Food w/ Drive-Thru	5.577 TSF	2,767	253	129	124	182	95	87	329	168	161	
INO	Fast Food w/ Drive-Thru	4.267 TSF	2,117	-	-	-	139	72	67	251	128	123	
Subtotal Trips			4,884	253	129	124	321	167	154	580	296	284	
Pass-By Trips ³			30%	-1,465	-76	-39	-37	-96	-50	-46	-174	-89	-85
Total Net Trips			3,419	177	90	87	225	117	108	406	207	199	

Note

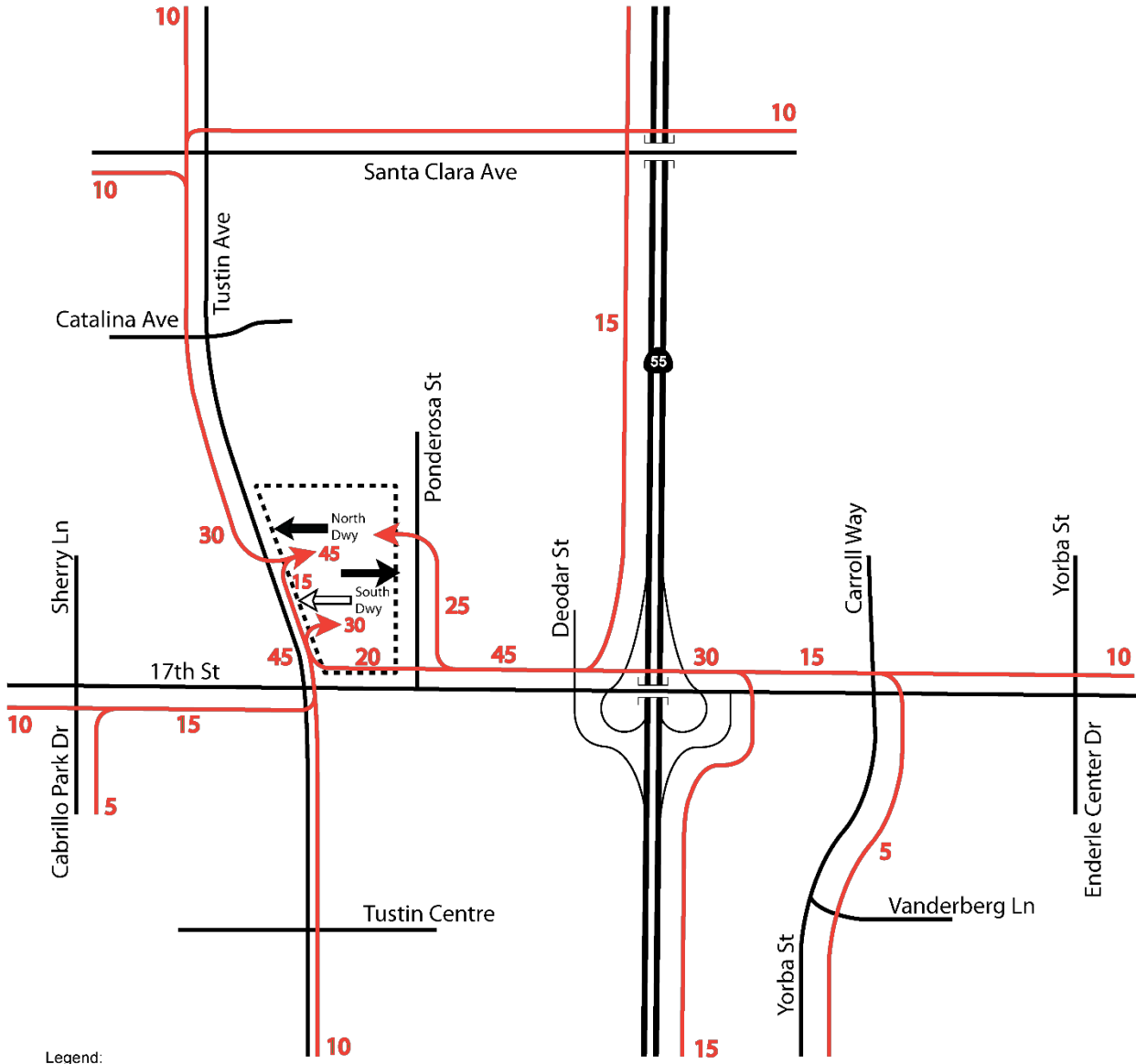
- ¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 9th Edition, 2012
- ² TSF = Thousand Square Feet
- ³ AM Pass-By Trips: ITE, *Trip Generation Manual*, 9th Edition, Table F.31 Pass-By Trips and Diverted Linked Trips, Weekday, AM Peak Period, Fast-Food Restaurant with Drive-Through Window, Average Pass-By Trip Percentage = 49%.
PM and Daily Pass-By Trips: ITE, *Trip Generation Manual*, 9th Edition, Table F.32 Pass-By Trips and Diverted Linked Trips, Weekday, PM Peak Period, Fast-Food Restaurant with Drive-Through Window, Average Pass-By Trip Percentage = 50%.
To be conservative, a 30% pass-by reduction factor is utilized even though ITE shows a higher rate.

Table 5 shows the proposed project traffic generation with pass-by trip reduction. As shown in Table 5, the project is anticipated to generate 3,419 net daily trips with 177 net AM peak hour trips, 225 net PM peak hour trips and 406 net Saturday mid-day trips.

4.2 Project Trip Distribution

Due to the nature of the project land use, most of the traffic to the project site are anticipated to travel from nearby neighborhoods in Santa Ana, Tustin and surrounding cities. Project trip distribution is estimated based on a review of adjacent land uses and input from County and City staff. Exhibits 7 and 8 illustrate the project outbound and inbound distribution patterns, respectively.

Exhibit 8 – Project Inbound Trip Distribution

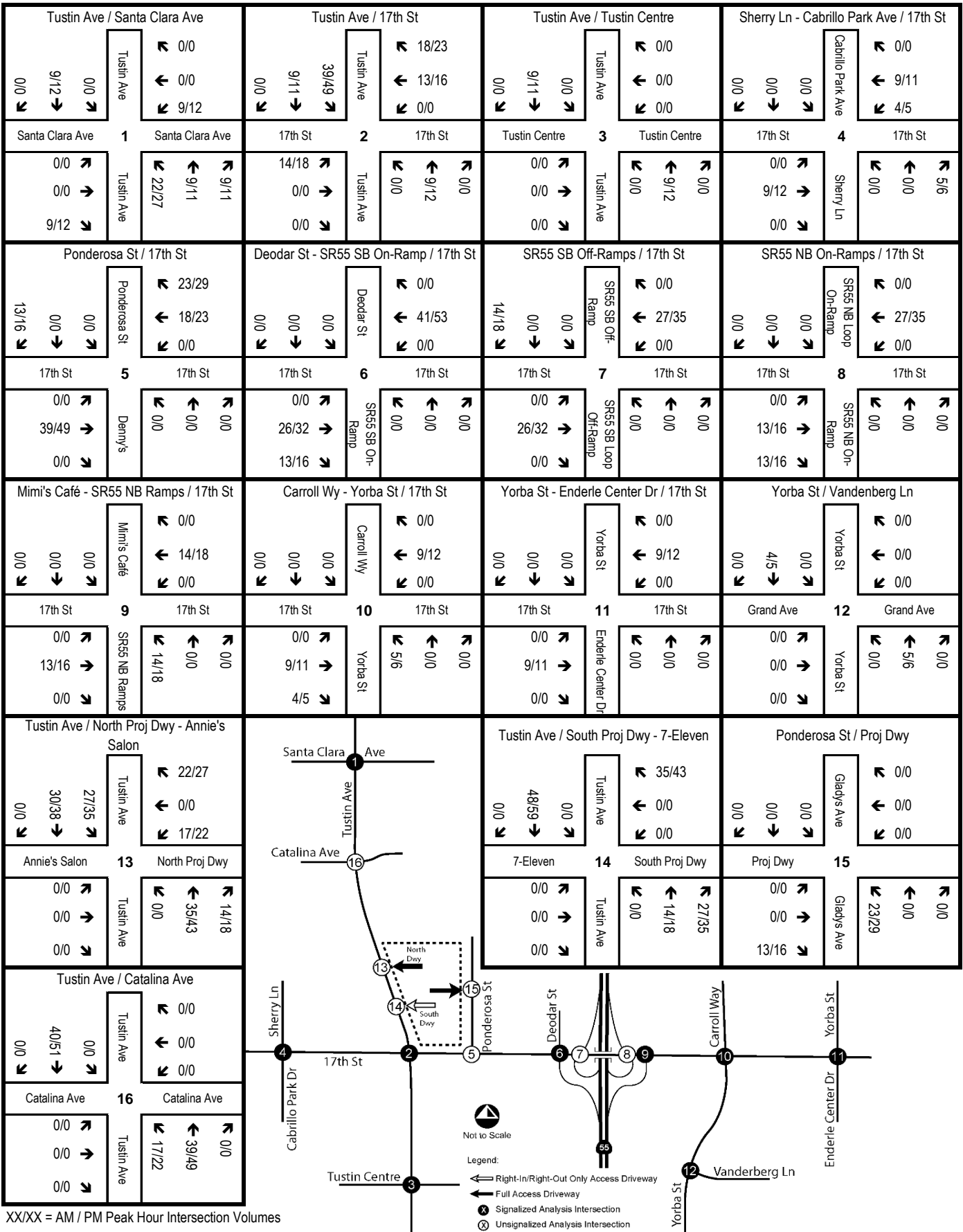


Legend:

- Right-In/Right-Out Only Access Driveway
- Full Access Driveway
- # Percent to Project



Not to Scale



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 9

Project-Only Weekday AM and PM Peak Hour Volumes

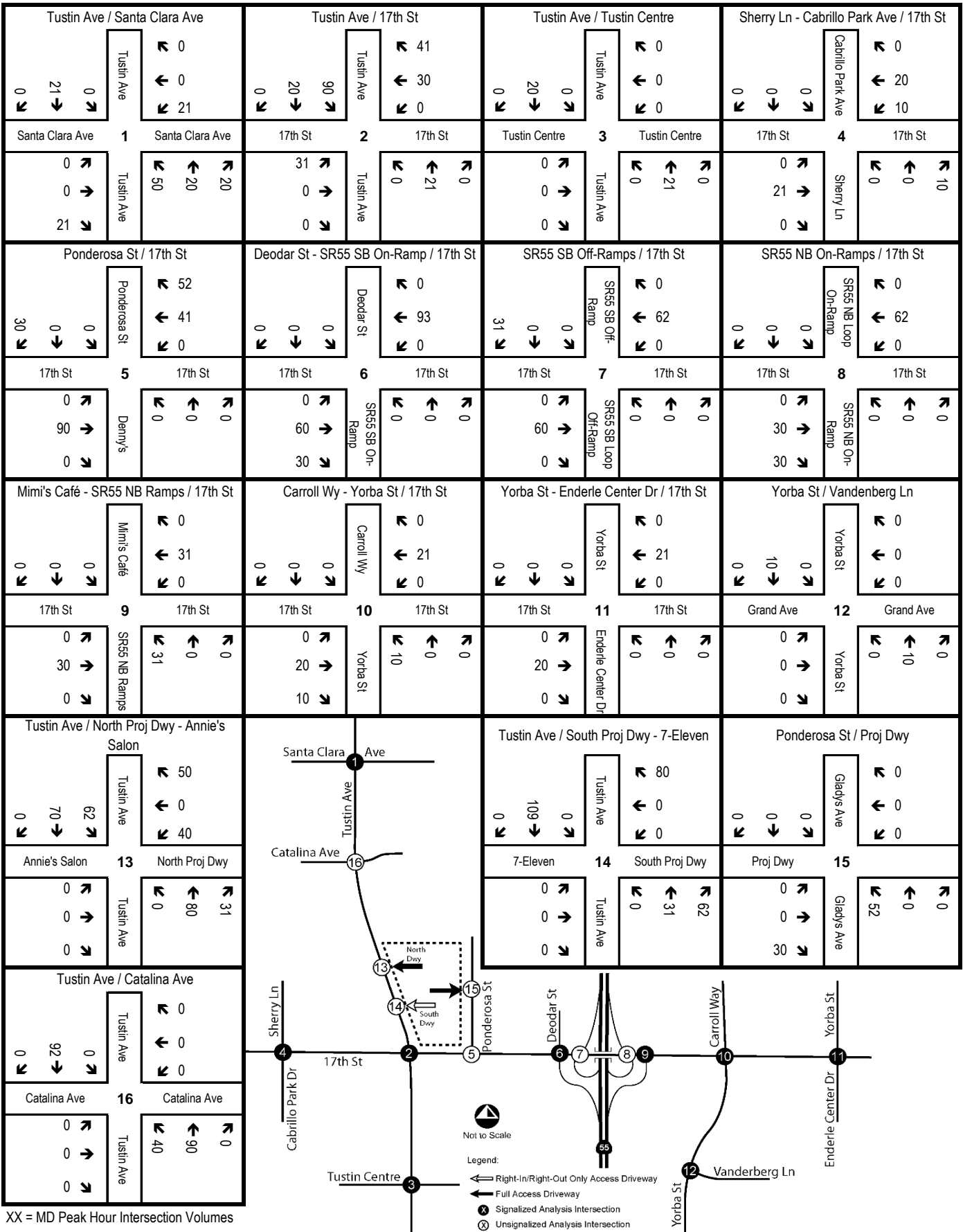


Exhibit 10

Project-Only Saturday MD Peak Hour Volumes

5.0 FUTURE TRAFFIC FORECAST

This section presents the future traffic forecast for each of the analysis scenarios evaluated in this study. The following future conditions are presented:

- Existing plus Project (EP) Conditions;
- Opening Year 2018 without Project (2018nP) Conditions;
- Opening Year 2018 with Project (2018wP) Conditions;
- Buildout 2035 without Project (2035nP) Conditions; and
- Buildout 2035 with Project (2035wP) Conditions.

5.1 Ambient Growth Rate

A background ambient growth rate of 1% per year is used to account for the growth of existing traffic along the arterial roadways when the project is anticipated to open in two years in Year 2018.

5.2 Cumulative Development Traffic

In addition to the ambient growth rate, the future traffic forecast included projections from other cumulative projects in the study area. Based on the development status information provided by the City of Santa Ana, City of Tustin and County of Orange, a total of 17 cumulative developments were identified as shown in Exhibit 11. City of Tustin and County of Orange indicated that there are no active projects in the study area.

Table 6 summarizes the cumulative development trip generation. As shown in Table 6, the 17 cumulative developments are anticipated to generate 12,492 daily trips with 858 AM peak hour trips, 1,110 PM peak hour trips and 1,106 Saturday mid-day trips. Appendix C contains the trip generation and distribution information for the 17 cumulative developments. Exhibits 12 shows cumulative development weekday AM and PM peak hour intersection volumes. Exhibits 13 shows cumulative development Saturday MD peak hour intersection volumes.

5.3 Buildout 2035 Traffic Forecast

Traffic forecast data from the Orange County Traffic Analysis Model (OCTAM) has been utilized to estimate the buildout 2035 baseline traffic conditions. Orange County Transportation Authority (OCTA) provided the 2035 and 2010 AM and PM peak period model runs. Appendix D includes the traffic model forecast data provided by OCTA staff.

BAKER reviewed the 2035 and 2010 traffic model data and calculated the incremental traffic increase for the study area roadways during the AM and PM peak hours. The model peak hour incremental growth are added to the existing traffic count to derive the 2035 baseline traffic conditions. Since the traffic model does not contain a Saturday mid-day peak hour forecast, this study used the model growth trend observed for weekday PM peak hour traffic volumes between existing and year 2035 conditions. Appendix E shows the post-processed 2035 baseline (without project) traffic volumes. Manual adjustments were made to achieve reasonable flow conservation along the roadway links between adjacent intersections. A reasonable flow conservation means that the upstream traffic is proportional to the downstream traffic. In other words, the number of

vehicles entering a roadway section and the number of vehicles exiting a roadway section is balanced.

Exhibit 11 – Cumulative Development Location Map

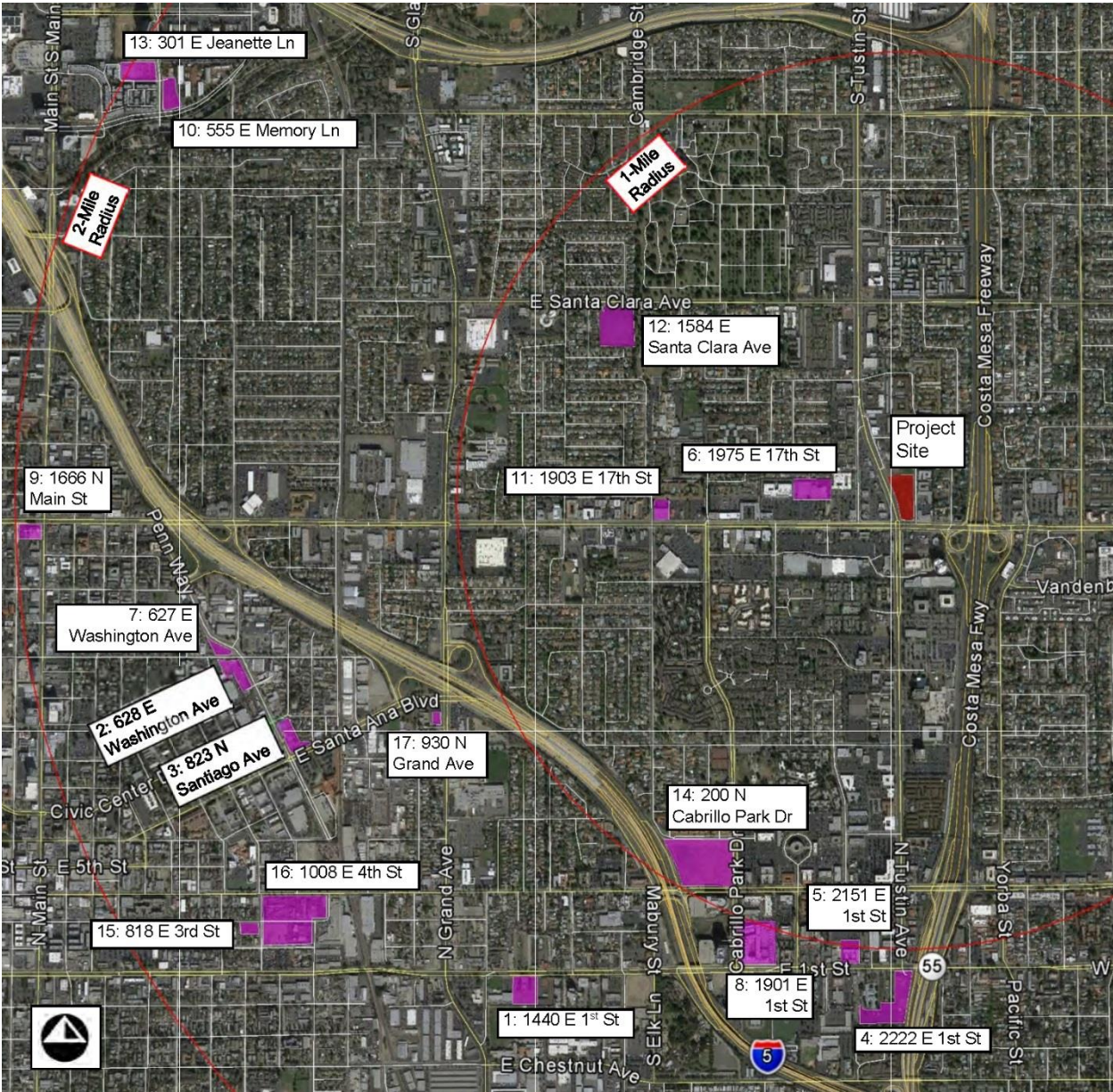
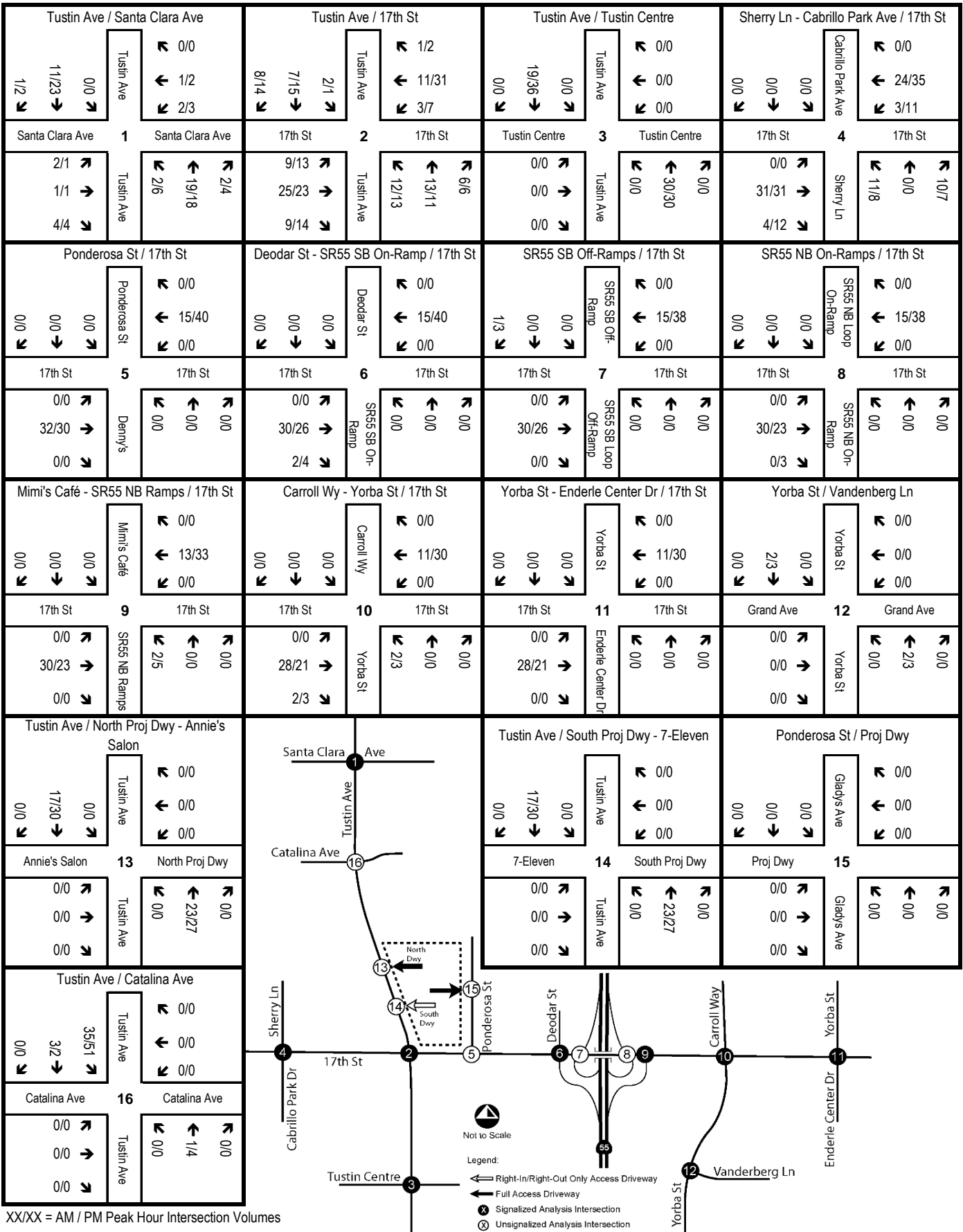


Table 6 – Cumulative Development Trip Generation

Traffic Generation												
No.	Cumulative		2-Way Daily	AM Peak			PM Peak			MD Peak		
	Address/Applicant	Land Use ¹		Total	In	Out	Total	In	Out	Total	In	Out
1	1440 E 1st St / AMCAL First Street Family Apartments	69 DU apartments	459	35	7	28	43	28	15	35	23	12
2	628 E Washington Ave / Certified Transportation	7,165 SF bus terminal maintenance building	179	6	4	2	5	2	3	6	3	3
3	923 N Santiago / Depot at Santiago	70 DU apartments; 9,000 SF retail/office	735	41	10	31	66	39	27	68	40	28
4	2222 E 1st St / East First Street Apartments	443 DU senior housing	1,524	89	31	58	115	62	53	138	80	58
5	2151 E 1st St / First Street Care Home	72 DU supportive housing	155	4	3	1	12	7	5	12	7	5
6	1975 E 17th St / Homeplace Center Expansion	9,500 SF commercial	406	9	6	3	35	17	18	46	24	22
7	627 E Washington Ave / Lotus Townhomes	8 DU townhomes	46	4	1	3	4	3	1	4	2	2
8	1907 E 1st St / Lyon Communities	2,424 SF commercial; 254 DU apartments	1,762	131	26	105	164	105	59	140	90	50
9	1666 N Main St / Meta Housing Adaptive Reuse	58 DU apartments	386	30	6	24	36	23	13	30	20	10
10	555 E Memory Ln / Park View at Town & County Manor	174 DU apartments	1,157	88	17	71	108	70	38	90	59	31
11	1703 E 17th St / Rocket Express Car Wash	4,995 SF car wash	952	70	35	35	70	35	35	70	35	35
12	1584 E Santa Clara Ave / Sexlinger Homes & Orchard	24 DU single-family homes	228	18	5	13	24	15	9	22	12	10
13	301 E Jeanette Ln / The 301	182 DU multi-family residential	1,057	80	13	67	95	64	31	86	46	40
14	200 N Cabrillo Park Dr / The Madison Mixed-Use	213 DU apartments; 4 DU live/work; 6,325 SF commercial	1,628	113	24	89	150	94	56	133	84	49
15	818 E 3rd St / The Salvation Army	18,772 SF emergency shelter	171	11	7	4	10	5	5	66	47	19
16	1008 E 4th St / Tom's Truck Residential Development	170 DU single-family homes	1,618	127	32	95	170	107	63	158	85	73
17	930 N Grand Ave / Train Station Live-Work	5 DU live/work	29	2	-	2	3	2	1	2	1	1
Total Cumulative Trips			12,492	858	227	631	1,110	678	432	1,106	658	448

Note

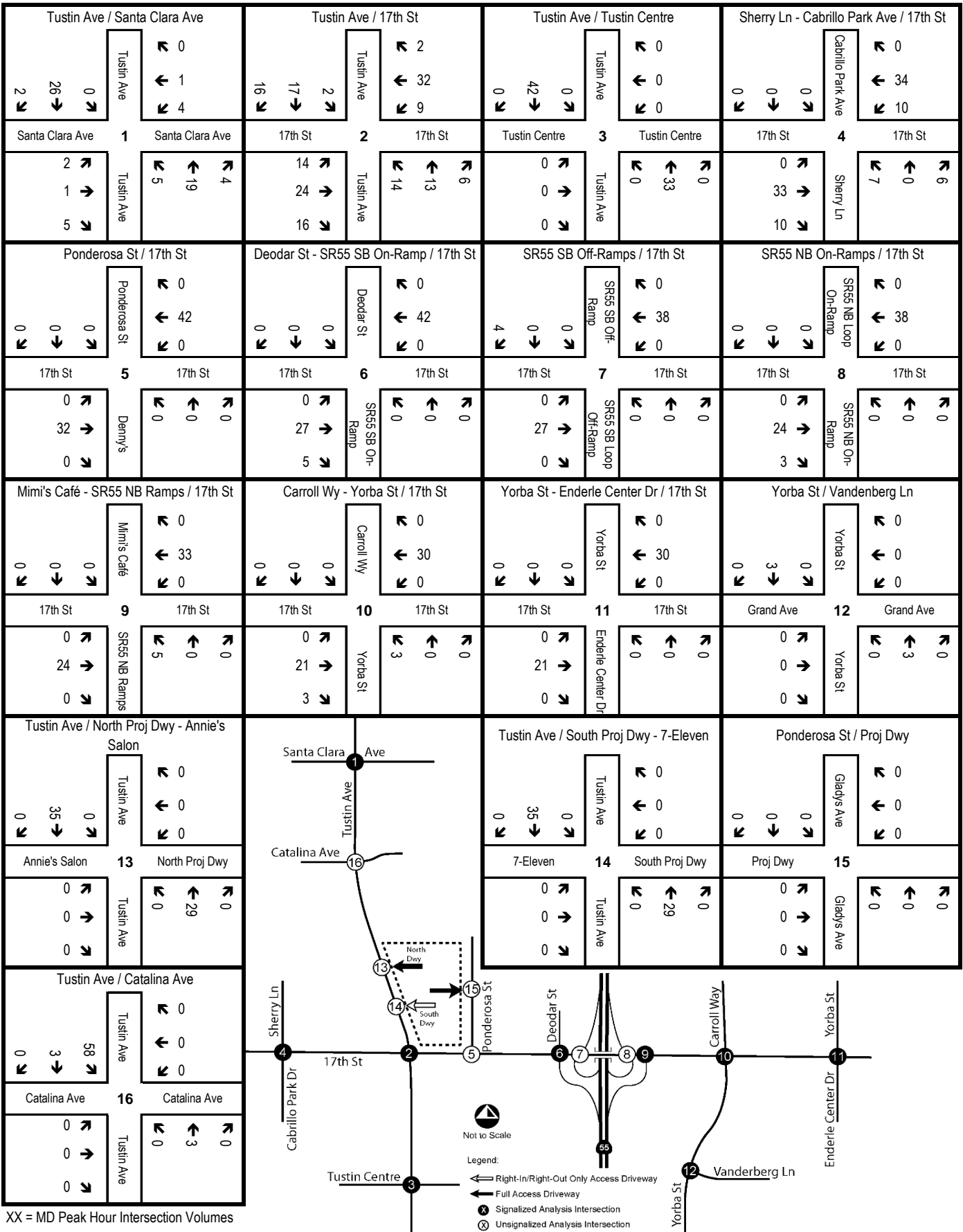
- ¹ SF = square feet; DU = dwelling unit
- See Appendix C for detailed trip rates and traffic generation calculations.



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 12

Cumulative Development Weekday AM and PM Peak Hour Volumes



XX = MD Peak Hour Intersection Volumes

Exhibit 13

Cumulative Development Saturday MD Peak Hour Volumes

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Traffic Impact Analysis

5.4 Existing Plus Project Conditions Traffic Volumes

Exhibit 14 shows Existing Plus Project (EP) conditions weekday AM and PM peak hour intersection volumes. Exhibit 15 shows Existing Plus Project (EP) Saturday Mid-Day (MD) peak hour intersection volumes.

5.5 Opening Year 2018 Without Project Conditions Traffic Volumes

Exhibit 16 shows Opening Year 2018 Without Project (2018nP) conditions weekday AM and PM peak hour intersection volumes. Exhibit 17 shows Opening Year 2018 Without Project (2018nP) Saturday Mid-Day (MD) peak hour intersection volumes.

5.6 Opening Year 2018 With Project Conditions Traffic Volumes

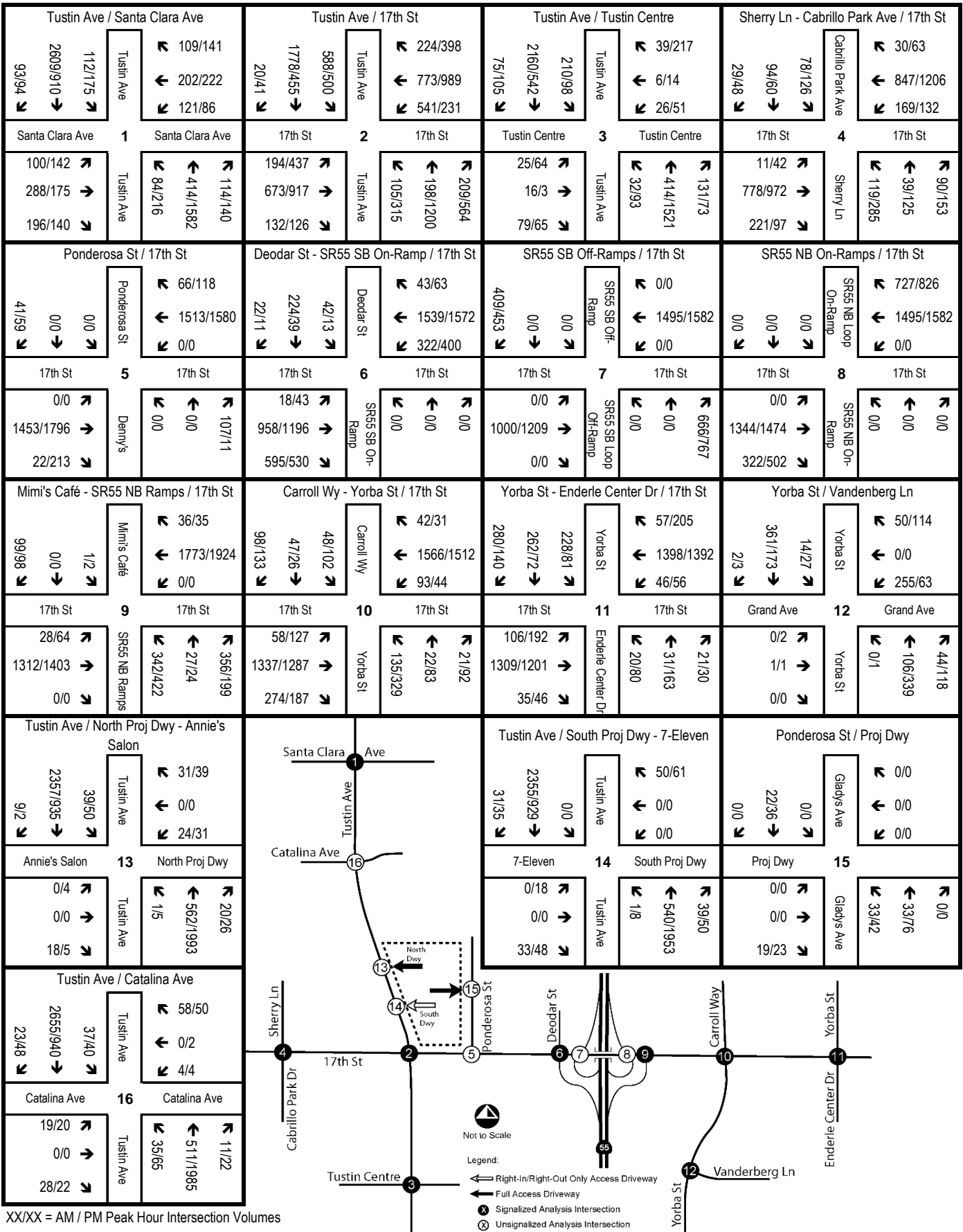
Exhibit 18 shows Opening Year 2018 With Project (2018wP) conditions weekday AM and PM peak hour intersection volumes. Exhibit 19 shows Opening Year 2018 With Project (2018wP) Saturday Mid-Day (MD) peak hour intersection volumes.

5.7 Buildout 2035 Without Project Conditions Traffic Volumes

Exhibit 20 shows Buildout 2035 Without Project (2035nP) conditions weekday AM and PM peak hour intersection volumes. Exhibit 21 shows Buildout 2035 Without Project (2035nP) Saturday Mid-Day (MD) peak hour intersection volumes.

5.8 Buildout 2035 With Project Conditions Traffic Volumes

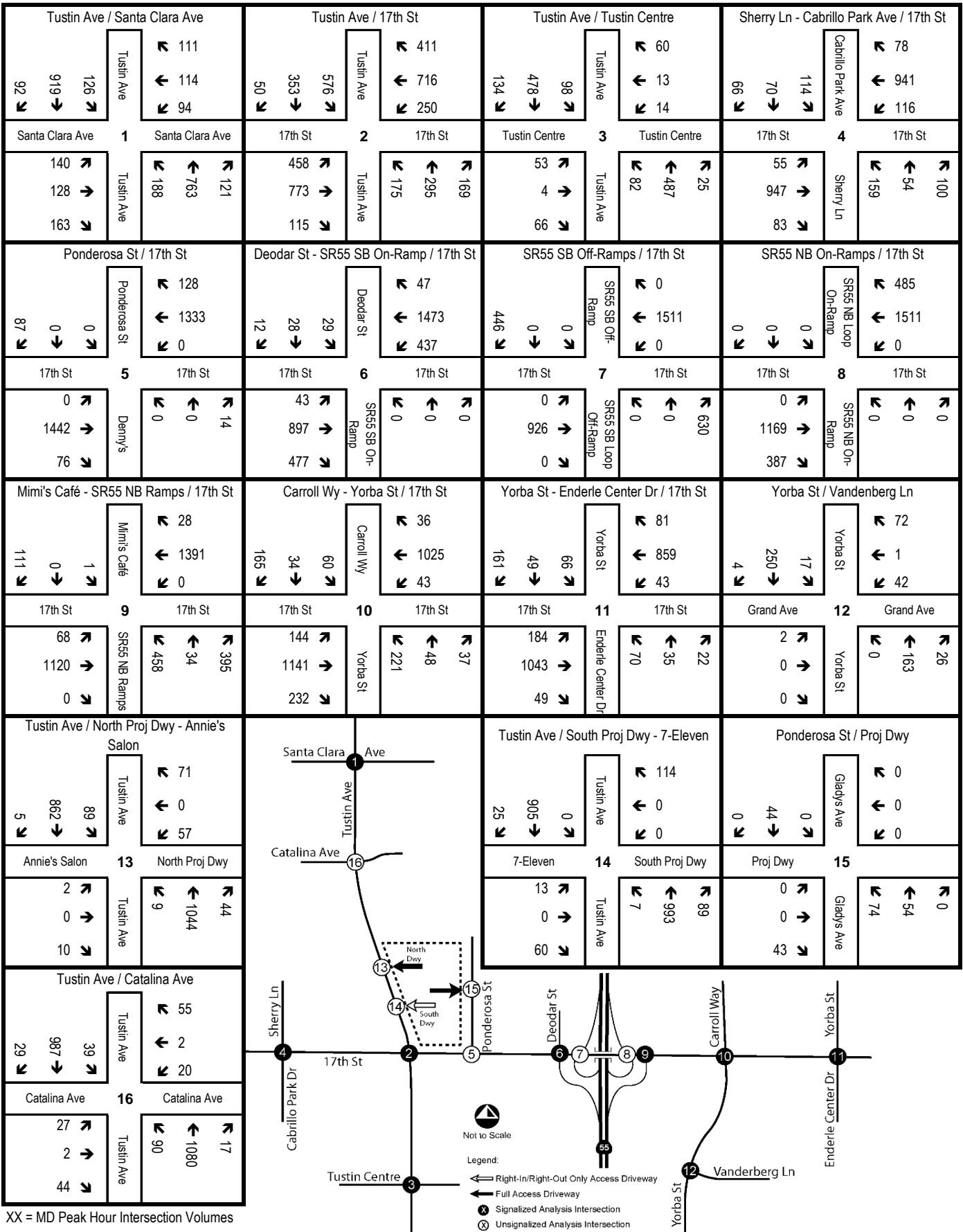
Exhibit 22 shows Buildout 2035 With Project (2035wP) conditions weekday AM and PM peak hour intersection volumes. Exhibit 23 shows Buildout 2035 With Project (2035wP) Saturday Mid-Day (MD) peak hour intersection volumes.



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 14

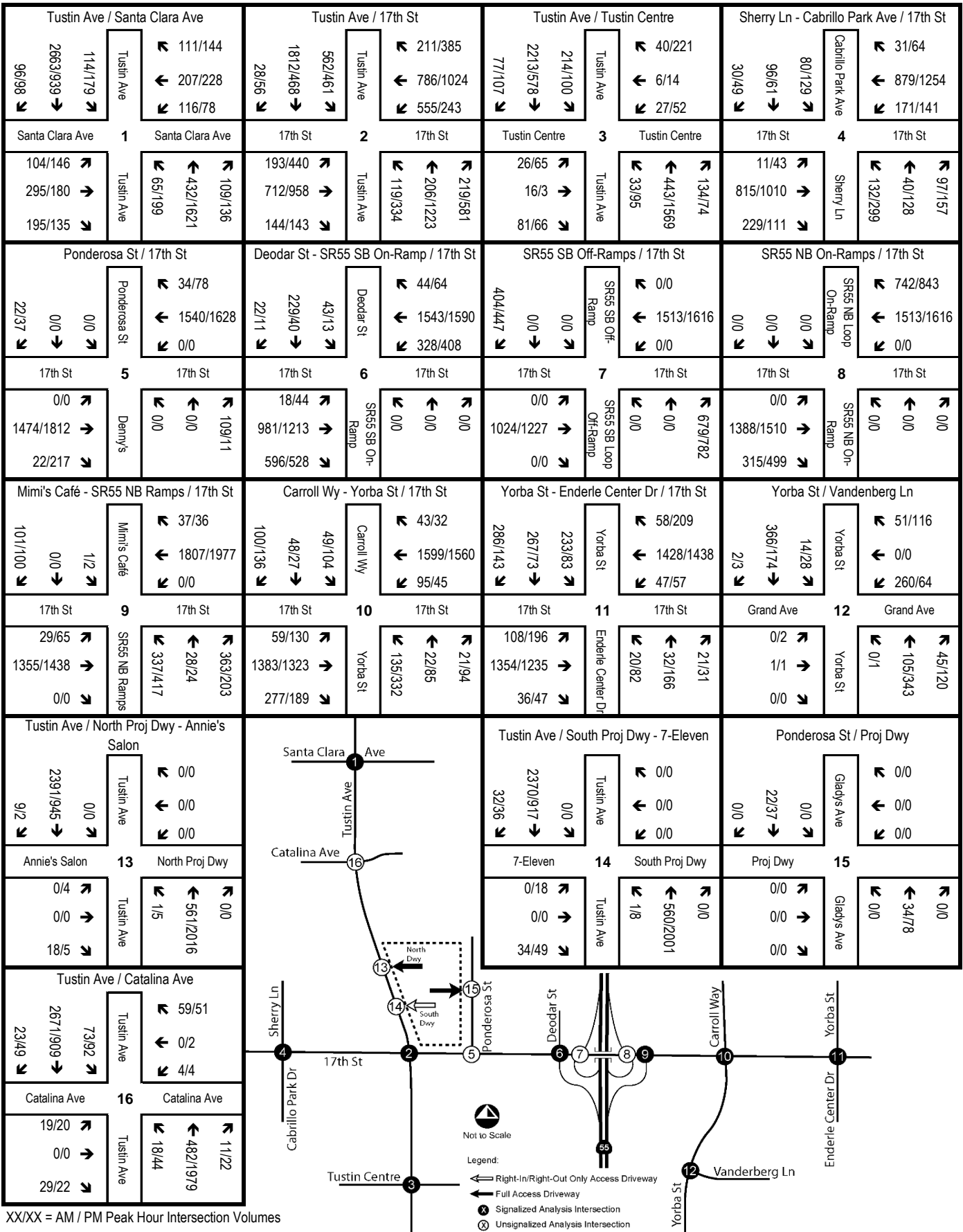
Existing Plus Project Weekday AM and PM Peak Hour Volumes



XX = MD Peak Hour Intersection Volumes

Exhibit 15

Existing Plus Project Saturday MD Peak Hour Volumes



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 16

Opening Year 2018 Without Project Weekday AM and PM Peak Hour Volumes

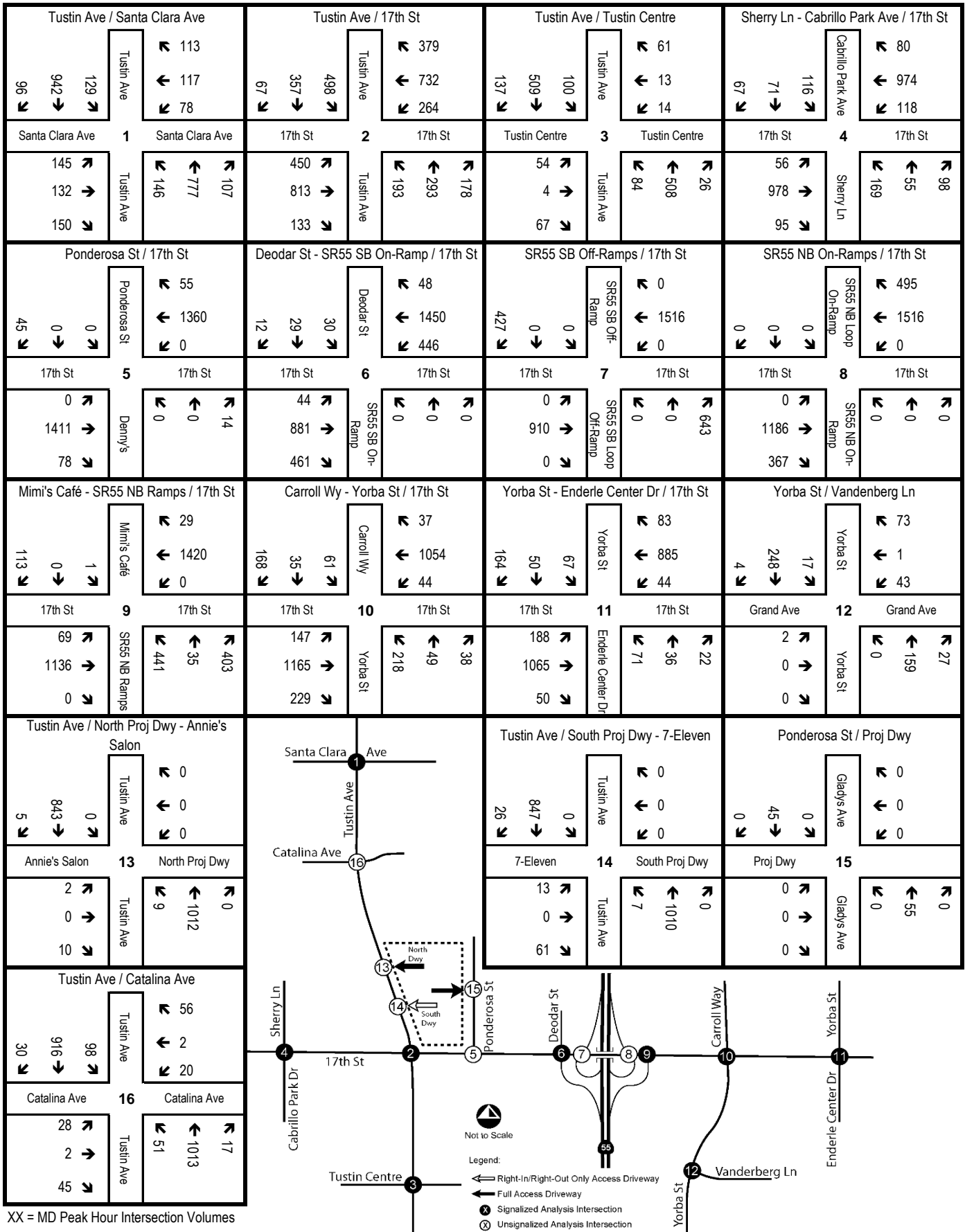
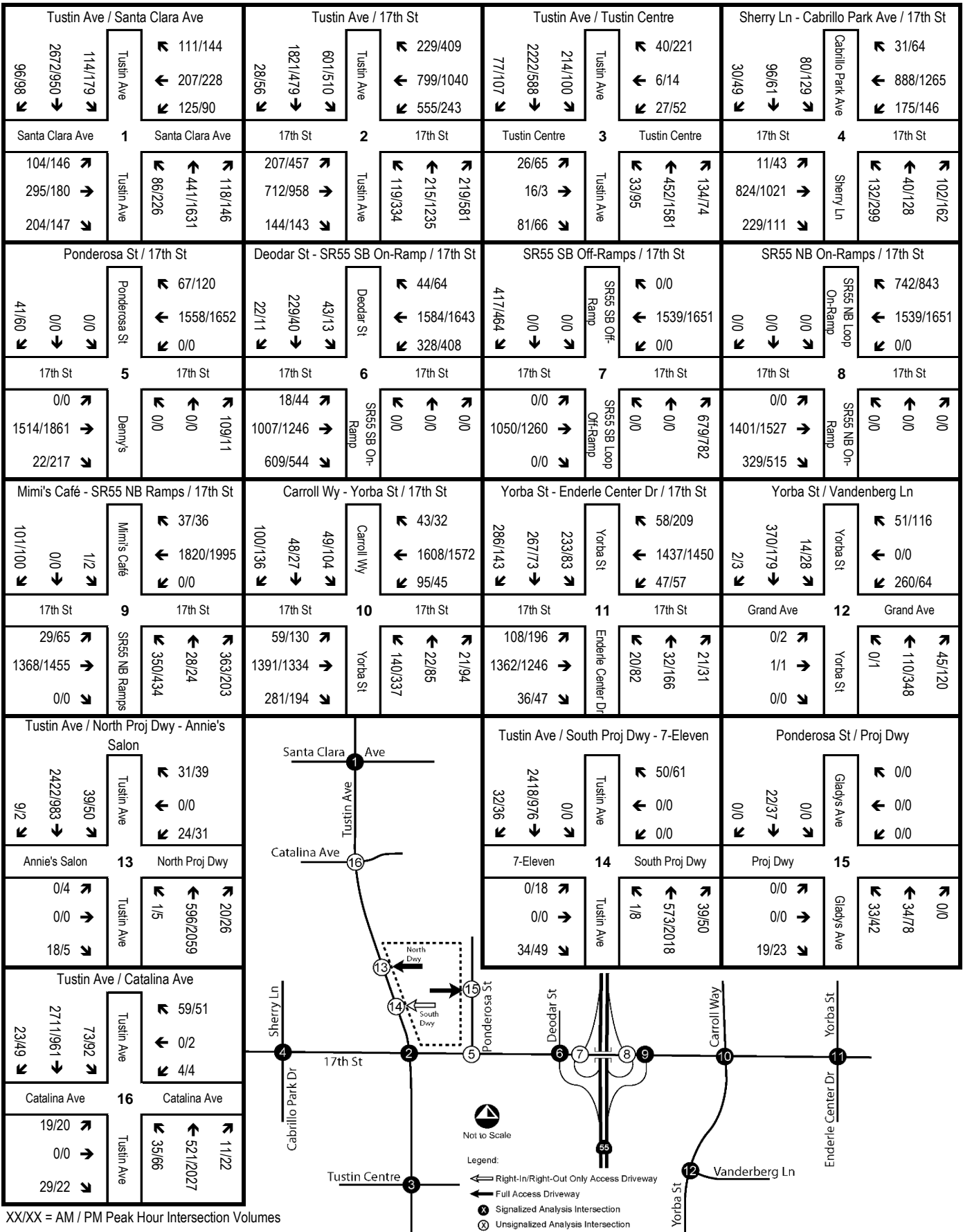


Exhibit 17

Opening Year 2018 Without Project Saturday MD Peak Hour Volumes



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 18

Opening Year 2018 With Project Weekday AM and PM Peak Hour Volumes

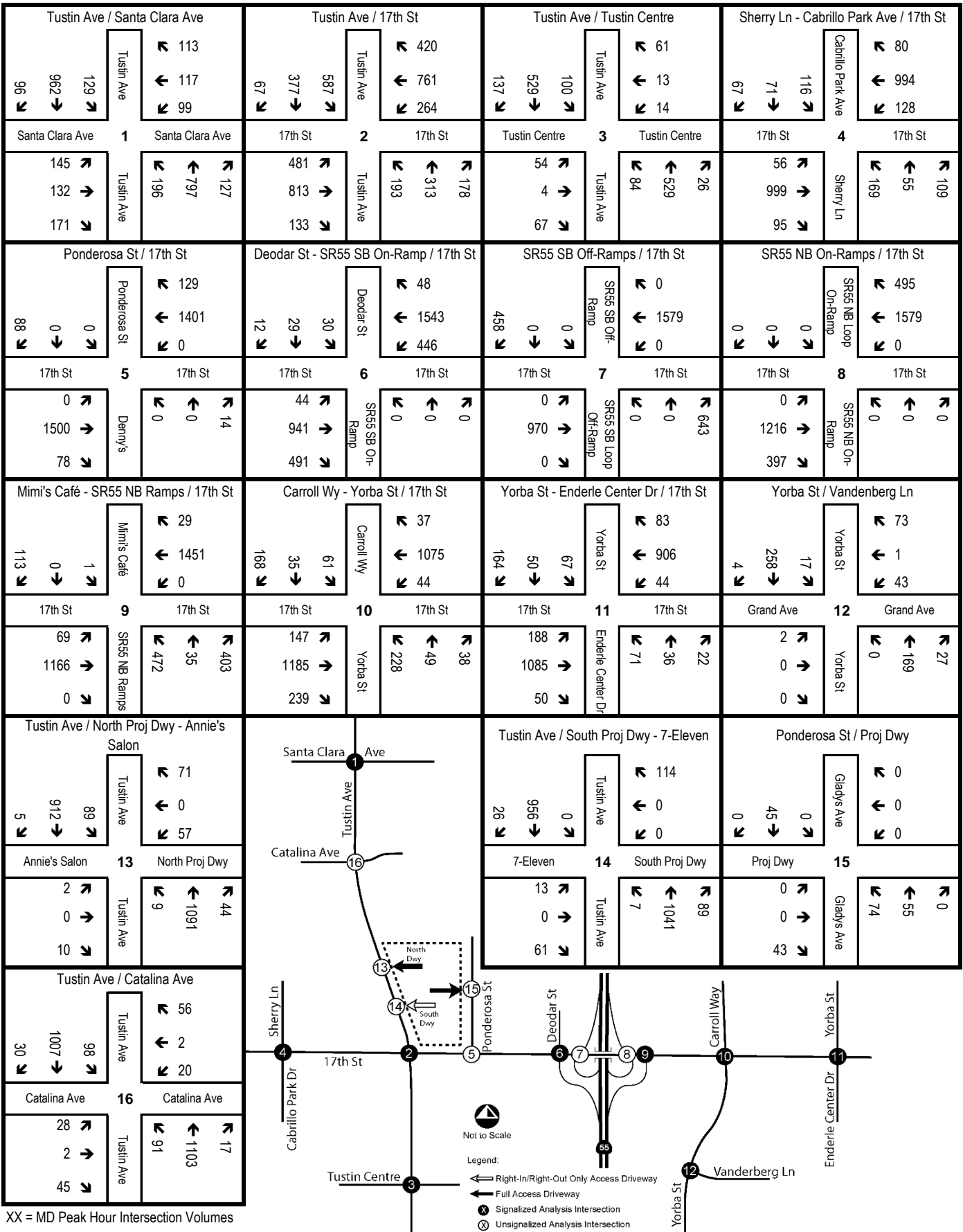


Exhibit 19

Opening Year 2018 With Project Saturday MD Peak Hour Volumes

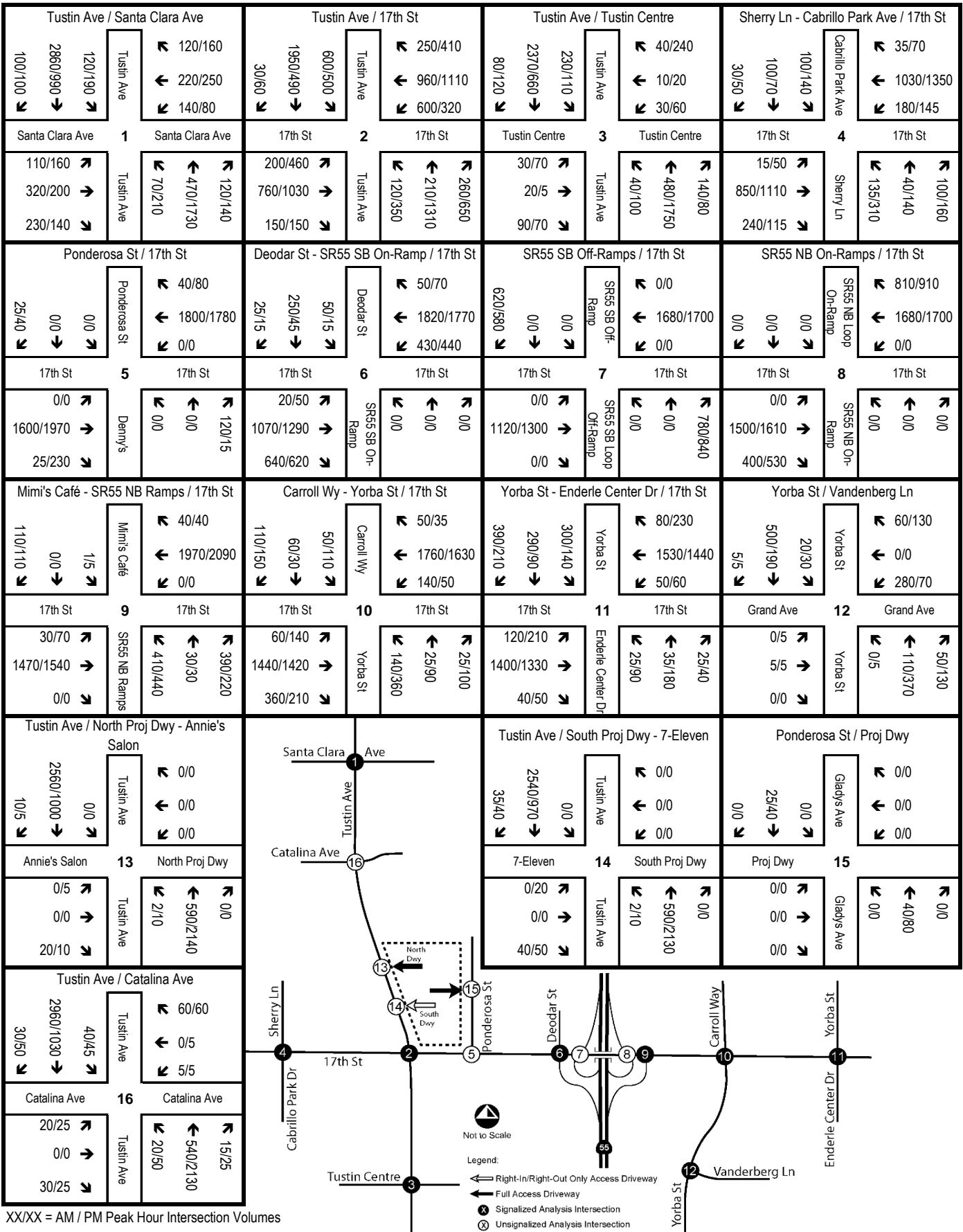
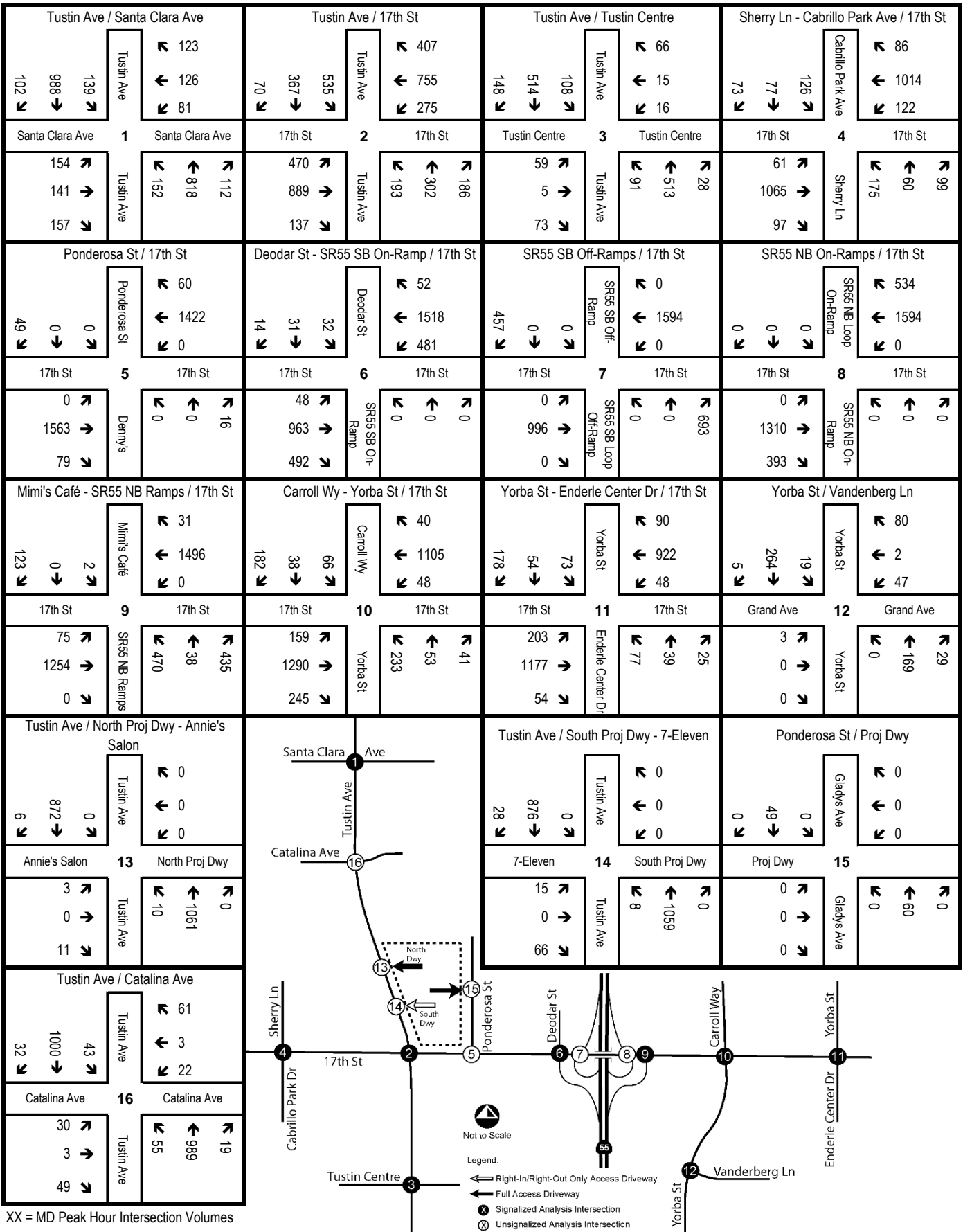


Exhibit 20

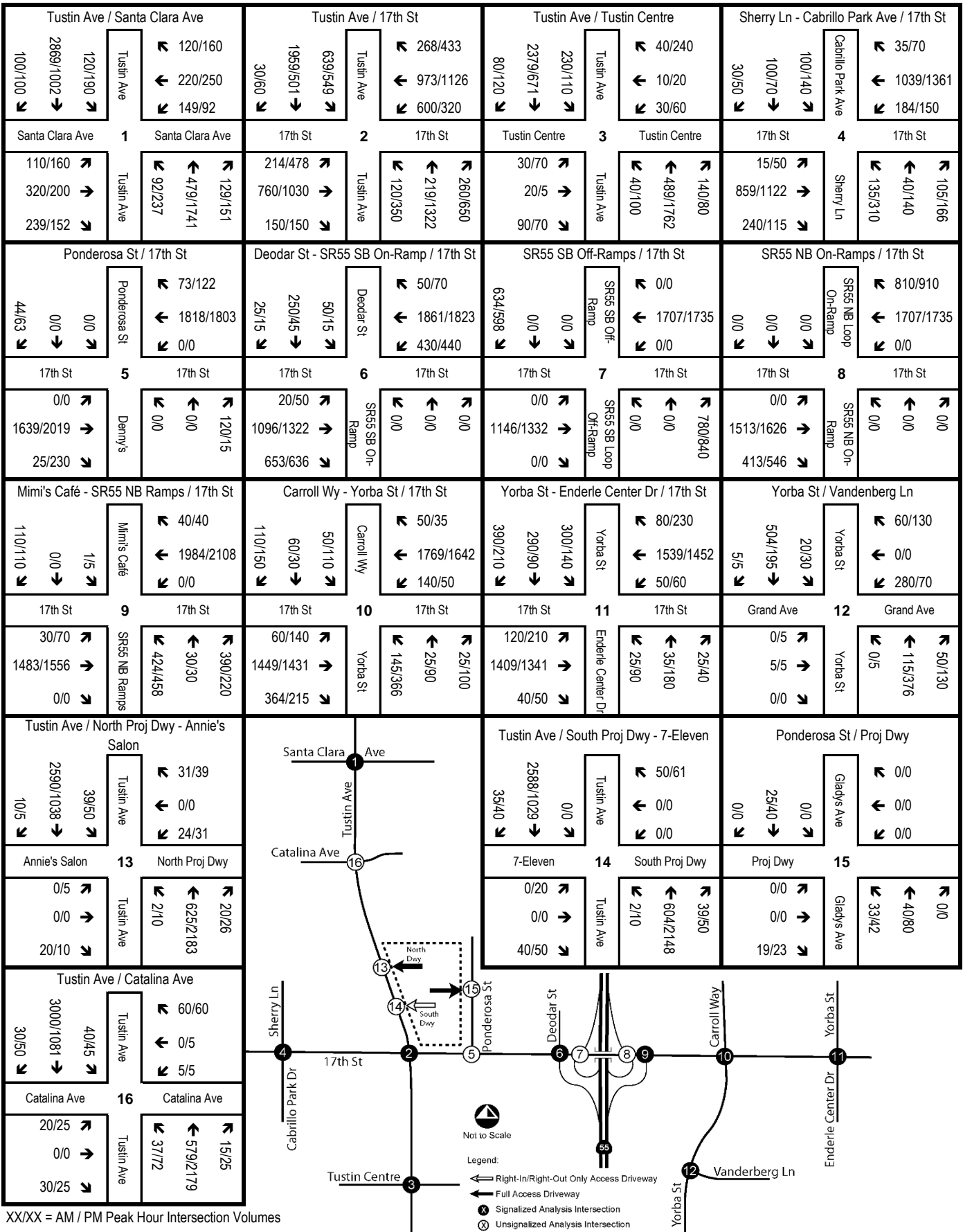
Buildout Year 2035 Without Project Weekday AM and PM Peak Hour Volumes



XX = MD Peak Hour Intersection Volumes

Exhibit 21

Buildout Year 2035 Without Project Saturday MD Peak Hour Volumes



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 22

Buildout Year 2035 With Project Weekday AM and PM Peak Hour Volumes

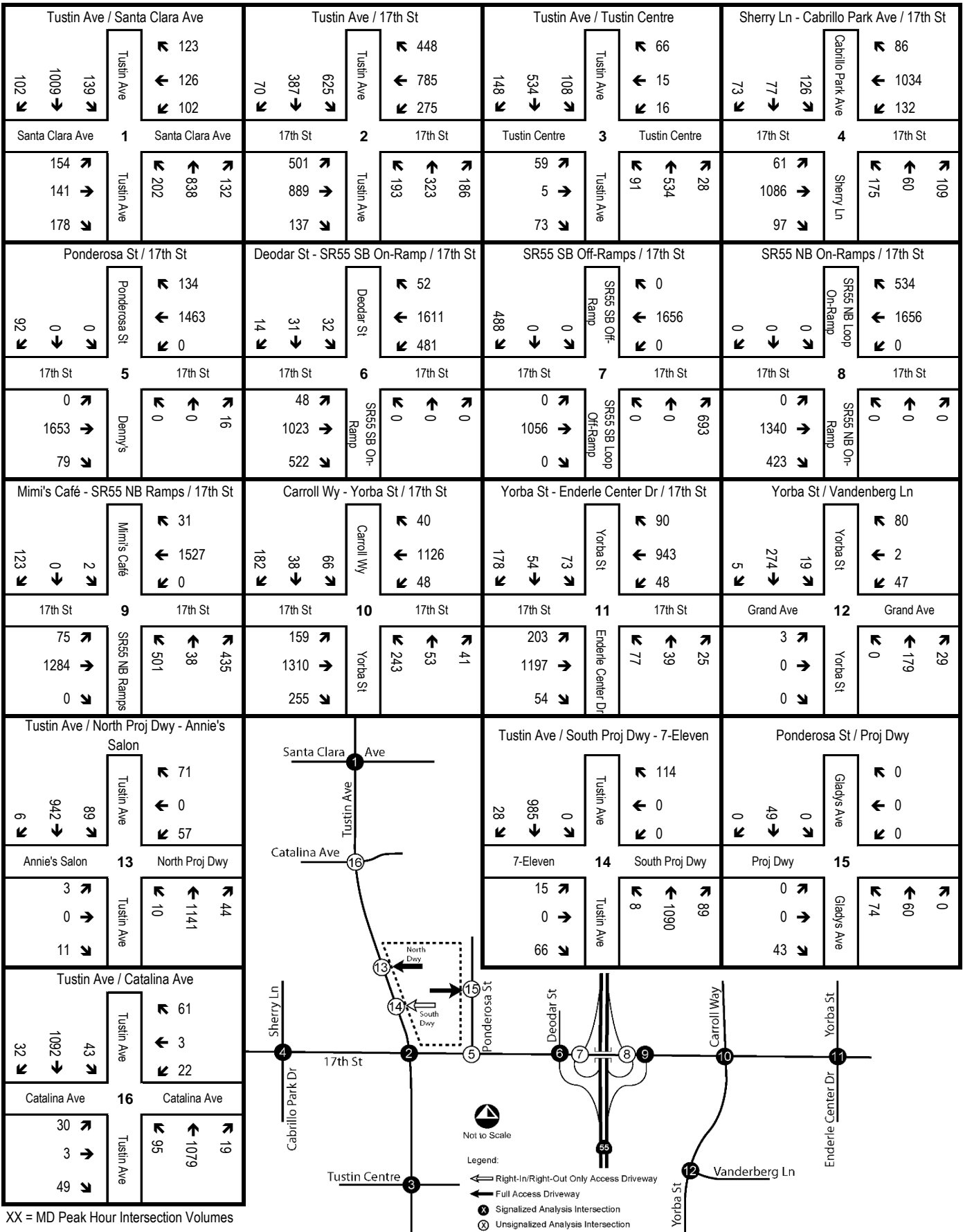


Exhibit 23

Buildout Year 2035 With Project Saturday MD Peak Hour Volumes

6.0 FUTURE CONDITIONS INTERSECTION ANALYSIS

This section presents the intersection operations analysis for the following future traffic scenarios, based on existing and initial geometry:

- Existing plus Project (EP) Conditions;
- Opening Year 2018 without Project (2018nP) Conditions;
- Opening Year 2018 with Project (2018wP) Conditions;
- Buildout 2035 without Project (2035nP) Conditions; and
- Buildout 2035 with Project (2035wP) Conditions.

6.1 Existing Plus Project Conditions Intersection Analysis

Table 7 summarizes the weekday AM, weekday PM and Saturday MD peak hour intersection operations analysis results for Existing Plus Project (EP) conditions, based on existing and initial geometry. Appendix F includes the EP conditions intersection operations analysis worksheets. As shown in Table 7, all study intersections are projected to operate at LOS D or better, except for the following four (4) intersections:

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie’s Salon & Spa Driveway – LOS F (PM)
Tustin Avenue at North Project Driveway – LOS F (AM, PM and MD)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Ave – LOS F (AM, PM and MD)

Table 7 shows that the project will contribute to a significant project impact at three (3) study intersections for EP conditions based on the impact threshold criteria. Considering the curved geometry of Tustin Avenue, the design speed, and proper traffic circulation, the following EP intersection improvements are recommended:

2. Tustin Avenue at 17th Street
 - Provide a third northbound through lane
13. Tustin Avenue at Annie’s Salon & Spa / North Project Driveway
 - Construct raised median to restrict left turn movements
 - Provide a third northbound through lane
16. Tustin Avenue at Catalina Avenue
 - Restrict eastbound left turn movement
 - Restrict westbound left turn movement

There is currently sufficient pavement width to accommodate a third northbound through lane on Tustin Avenue at 17th Street, and no right-of-way acquisition is necessary. With the recommended construction of a raised median, the westbound left turn movement at the north project driveway (Intersection #13) will redistribute by turning right from the north project driveway to go northbound on Tustin Avenue, and then making a northbound U-turn on either Tustin Avenue at Catalina Avenue (Intersection #16) or Tustin Avenue at Santa Clara Avenue (Intersection #1) to go southbound on Tustin Avenue. Depending on the availability of gap in the southbound traffic,

some percentage of U-turning traffic is assumed to turn at Tustin Avenue at Catalina Avenue and the remaining to turn at Tustin Avenue at Santa Clara Avenue. The redistributed weekday AM and PM peak hour intersection volumes are shown in Exhibit 24 for Existing Plus Project conditions, with raised median. Exhibit 25 shows the redistributed Existing Plus Project Saturday MD peak hour intersection volumes, with raised median.

The mitigation recommendation, for constructing a raised median to restrict the north project driveway to right in/right out only, will span from the intersection of Tustin Avenue at Annie's Salon & Spa / North Project Driveway (Intersection #13) to Tustin Avenue at 17th Street (Intersection #2). Although the intersection of Tustin Avenue at 7-Eleven Driveway (Intersection #14) is not significantly impacted by the proposed project, implementation of this recommendation will have an ancillary effect on Intersection #14; changing Intersection #14 operation from full access to a right in/right out only. However, based on the existing traffic, this restriction will not result in a significant impact to Intersection #14.

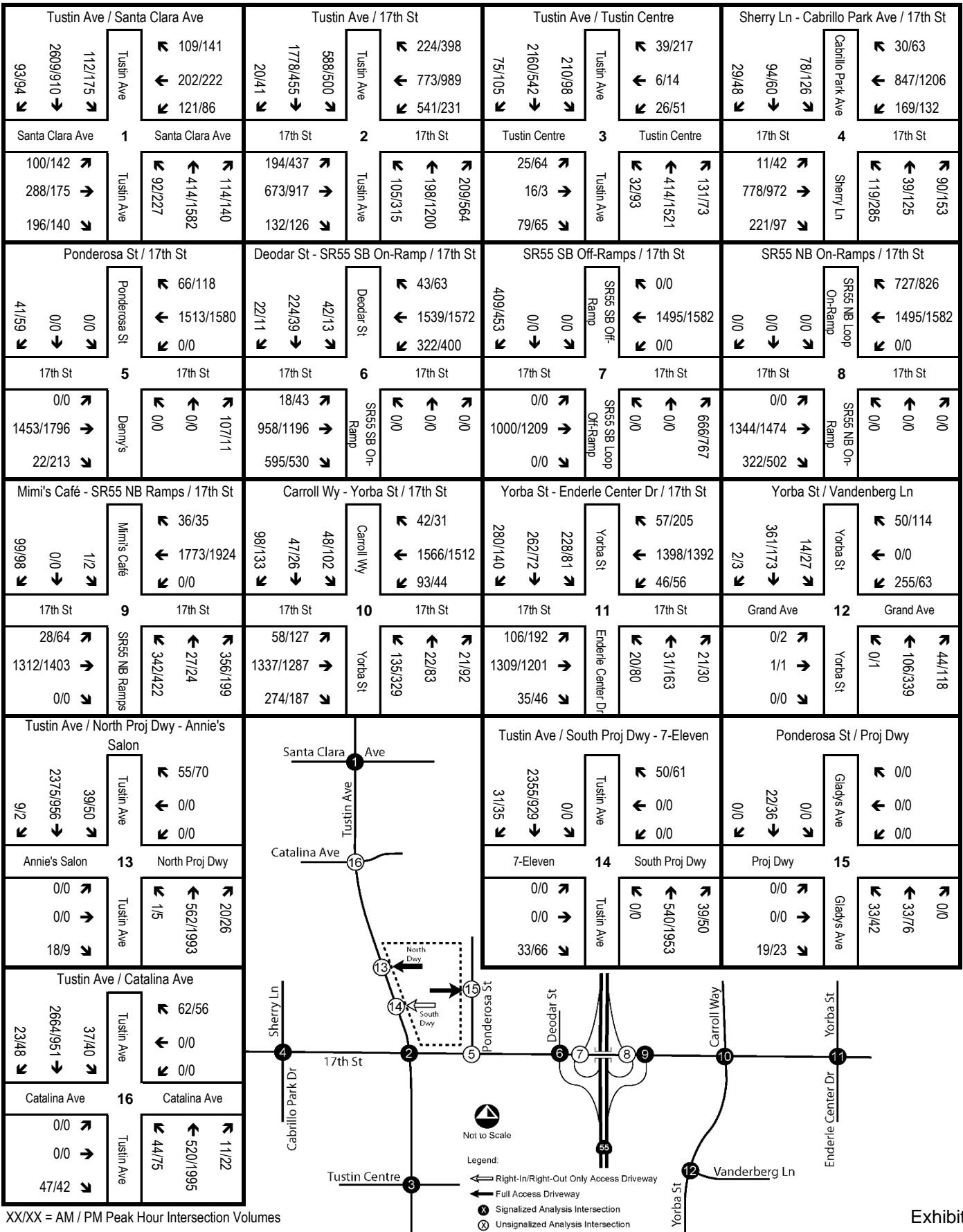
**Table 7
Existing Plus Project Conditions Intersection Analysis Summary**

Intersection			(1) Existing Conditions						(2) Existing Plus Project Conditions						(3) Significant Project Impact			
			AM		PM		MD		AM		PM		MD		Increase			Project Impact ²
No.	Name	Type*	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	AM	PM	MD	
1	Tustin Ave / Santa Clara Ave	TS	0.851	D	0.652	B	0.486	A	0.876	D	0.656	B	0.522	A	0.025	0.004	0.036	No
2	Tustin Ave / 17th St • 3rd NB Thru Lane	TS	0.757	C	0.921	E	0.563	A	0.759	C	0.951	E	0.614	B	0.002	0.030	0.051	Yes
									0.759	C	0.825	D	0.585	A	0.002	-0.096	0.022	No
3	Tustin Ave / Tustin Centre	TS	0.593	A	0.578	A	0.296	A	0.595	A	0.580	A	0.300	A	0.002	0.002	0.004	No
4	Sherry Ln - Cabrillo Park Ave / 17th St	TS	0.517	A	0.607	B	0.506	A	0.522	A	0.613	B	0.517	A	0.005	0.006	0.011	No
5	17th St / Ponderosa St Denny's Dwy	CSS	12.7	B	13.7	B	12.1	B	13.3	B	14.8	B	13.6	B	0.6	1.1	1.5	No
		CSS	12.0	B	13.0	B	10.9	B	12.2	B	13.2	B	11.1	B	0.2	0.2	0.2	No
6	Deodar St - SR55 SB On-Ramp / 17th St ◦ HCM Analysis	TS	0.614	B	0.581	A	0.617	B	0.619	B	0.588	A	0.632	B	0.005	0.007	0.015	No
		TS	17.0	B	12.1	B	13.7	B	17.2	B	12.1	B	14.1	B	0.2	0.0	0.4	No
7	SR55 SB Off-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	0.0	0.0	No
8	SR55 NB On-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	0.0	0.0	No
9	Mimi's Café - SR55 NB Ramps / 17th St ◦ HCM Analysis	TS	0.511	A	0.678	B	0.577	A	0.516	A	0.859	D	0.589	A	0.005	0.181	0.012	No
		TS	20.6	C	21.7	C	24.1	C	20.9	C	22.3	C	26.0	C	0.3	0.6	1.9	No
10	Carroll Wy - Yorba St / 17th St	TS	0.535	A	0.655	B	0.573	A	0.538	A	0.660	B	0.581	A	0.003	0.005	0.008	No
11	Yorba St - Enderle Center Dr / 17th St	TS	0.585	A	0.632	B	0.515	A	0.586	A	0.635	B	0.519	A	0.001	0.003	0.004	No
12	Yorba St / Vandenberg Ln	TS	0.355	A	0.279	A	0.186	A	0.356	A	0.281	A	0.189	A	0.001	0.002	0.003	No
13	Tustin Ave / Annie's • Raised Median North Proj Dwy	CSS	29.5	D	63.5	F	15.7	C	30.2	D	133.8	F	23.1	C	0.7	70.3	7.4	Yes
		CSS							30.5	D	12.3	B	11.7	B	1.0	-51.2	-4.0	No
		CSS							158.8	F	2314.9	F	282.9	F	158.8	2314.9	282.9	Yes
		CSS							11.8	B	29.5	D	18.0	C	11.8	29.5	18.0	No
		CSS							11.8	B	29.5	D	18.0	C	11.8	29.5	18.0	No
14	Tustin Ave / 7-Eleven South Proj Dwy • Raised Median + 3rd NB Thru Lane	CSS	38.5	E	14.0	B	13.2	B	40.1	E	14.5	B	14.0	B	1.6	0.5	0.8	No ³
		CSS							10.7	B	28.9	D	14.8	B	10.7	28.9	14.8	No
		CSS							11.7	B	31.9	D	17.1	C	11.7	31.9	17.1	No
15	Ponderosa St / Proj Dwy	CSS							8.5	A	8.6	A	8.7	A	8.5	8.6	8.7	No
16	Tustin Ave / Catalina Ave • Restrict EB/WB Left Turn	CSS	1641.1	F	357.9	F	75.3	F	3657.6	F	655.5	F	193.1	F	2016.5	297.6	117.8	Yes
		CSS							33.6	D	26.8	D	15.6	C	-1607.5	-331.1	-59.7	No

Note

- * Intersection Type: TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop; UNC = Uncontrolled
- 1 Signalized Intersections: Intersection Capacity Utilization (ICU) Analysis Method, Volume/Capacity (V/C) Ratio.
Unsignalized Intersections: Highway Capacity Manual (HCM) Analysis Method, Average Delay (seconds per vehicle).
- 2 Impacts at intersections are considered to be significant when the following changes in the volume-to-capacity (V/C) ratios occurs between the "without project" and the "with project" conditions, and operating at LOS E or worse:

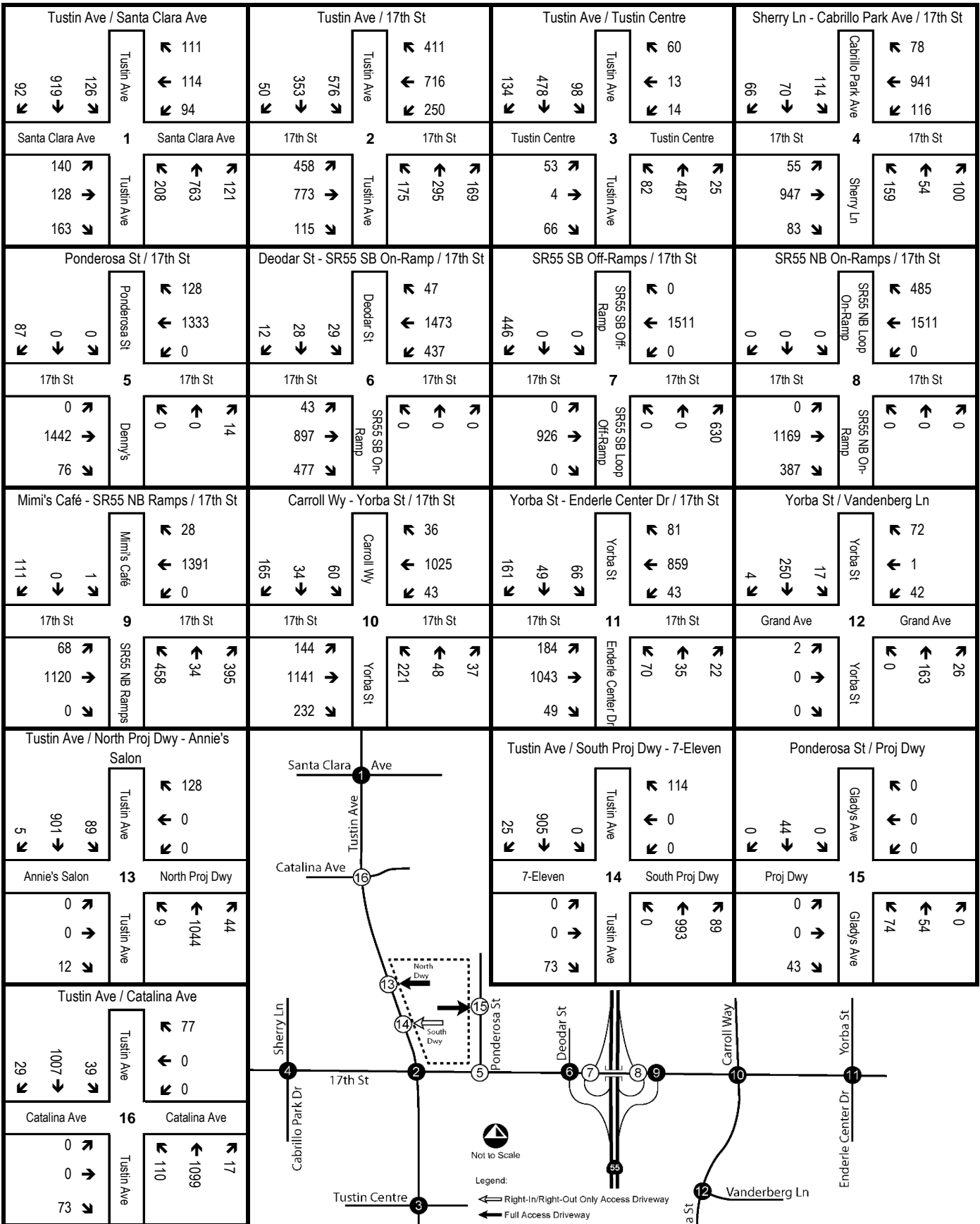
<u>Level of Service</u>	<u>Change in V/C</u>
E, F	> 0.01
- 3 No impact to the Level of Service grade for unsignalized intersection.



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 24

**Redistributed Existing Plus Project
 Weekday AM and PM Peak Hour Volumes, With Raised Median**



XX = MD Peak Hour Intersection Volumes

Exhibit 25

**Redistributed Existing Plus Project
Saturday MD Peak Hour Volumes, With Raised Median**

6.2 Opening Year 2018 Without Project Conditions Intersection Analysis

Table 8 summarizes the weekday AM, weekday PM and Saturday MD peak hour intersection operations analysis results for Opening Year 2018 Without Project (2018nP) conditions, based on existing geometry. Appendix G includes the 2018nP conditions intersection operations analysis worksheets. As shown in Table 8, all study intersections are projected to operate at LOS D or better, except for the following four (4) intersections:

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie’s Salon & Spa Driveway – LOS F (PM)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM and MD)

6.3 Opening Year 2018 With Project Conditions Intersection Analysis

Table 8 summarizes the weekday AM, weekday PM and Saturday Mid-Day (MD) peak hour intersection operations analysis results for Opening Year 2018 With Project (2018wP) conditions, based on existing and initial geometry. Appendix H includes the 2018wP conditions intersection operations analysis worksheets. As shown in Table 8, all study area intersections are projected to operate at LOS D or better, except for the following four (4) intersections :

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie’s Salon & Spa Driveway – LOS F (PM)
Tustin Avenue at North Project Driveway – LOS F (AM, PM and MD)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

Table 8 shows that the project will contribute to a significant project impact at three (3) study intersections for Opening Year 2018 With Project conditions based on the impact threshold criteria. Considering the curved geometry of Tustin Avenue, the design speed, and proper traffic circulation, the following 2018wP intersection improvements are recommended:

2. Tustin Avenue at 17th Street
 - Provide a third northbound through lane
13. Tustin Avenue at Annie’s Salon & Spa / North Project Driveway
 - Construct raised median to restrict left turn movements
 - Provide a third northbound through lane
16. Tustin Avenue at Catalina Avenue
 - Restrict eastbound left turn movement
 - Restrict westbound left turn movement

There is currently sufficient pavement width to accommodate a third northbound through lane on Tustin Avenue at 17th Street, and no right-of-way acquisition is necessary. With the recommended construction of a raised median, the westbound left turn movement at the north project driveway (Intersection #13) will redistribute by turning right from the north project driveway to go northbound on Tustin Avenue, and then making a northbound U-turn on either Tustin Avenue at Catalina Avenue (Intersection #16) or Tustin Avenue at Santa Clara Avenue (Intersection #1) to go southbound on Tustin Avenue. The redistributed weekday AM and PM peak hour intersection

volumes are shown in Exhibit 26 for Opening Year 2018 With Project conditions, with raised median. Exhibit 27 shows the redistributed Opening Year 2018 With Project Saturday MD peak hour intersection volumes, with raised median.

The mitigation recommendation, for constructing a raised median to restrict the north project driveway to right in/right out only, will span from the intersection of Tustin Avenue at Annie's Salon & Spa / North Project Driveway (Intersection #13) to Tustin Avenue at 17th Street (Intersection #2). Although the intersection of Tustin Avenue at 7-Eleven Driveway (Intersection #14) is not significantly impacted by the proposed project, implementation of this recommendation will have an ancillary effect on Intersection #14; changing Intersection #14 operation from full access to a right in/right out only. However, based on the existing traffic, this restriction will not result in a significant impact to Intersection #14.

Table 8
Opening Year 2018 With Project Conditions Intersection Analysis Summary

Intersection			(1) Opening Year 2018 Without Project Conditions						(2) Opening Year 2018 With Project Conditions						(3) Significant Project Impact			Project Impact ²
			AM		PM		MD		AM		PM		MD		Increase			
No.	Name	Type*	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	AM	PM	MD	
1	Tustin Ave / Santa Clara Ave	TS	0.874	D	0.669	B	0.505	A	0.898	D	0.673	B	0.541	A	0.024	0.004	0.036	No
2	Tustin Ave / 17th St • 3rd NB Thru Lane	TS	0.784	C	0.954	E	0.589	A	0.786	C	0.983	E	0.639	B	0.002	0.029	0.050	Yes
									0.786	C	0.853	D	0.608	B	0.002	-0.101	0.019	No
3	Tustin Ave / Tustin Centre	TS	0.608	B	0.595	A	0.309	A	0.610	B	0.597	A	0.313	A	0.002	0.002	0.004	No
4	Sherry Ln - Cabrillo Park Ave / 17th St	TS	0.543	A	0.640	B	0.535	A	0.548	A	0.645	B	0.546	A	0.005	0.005	0.011	No
5	17th St / Ponderosa St Denny's Dwy	CSS	12.9	B	14.1	B	12.4	B	13.5	B	15.3	C	14.0	B	0.6	1.2	1.6	No
		CSS	12.3	B	13.3	B	11.1	B	12.4	B	13.4	B	11.3	B	0.1	0.1	0.2	No
6	Deodar St - SR55 SB On-Ramp / 17th St ◦ HCM Analysis	TS	0.631	B	0.597	A	0.635	B	0.637	B	0.604	B	0.650	B	0.006	0.007	0.015	No
		TS	17.7	B	12.4	B	14.2	B	17.9	B	12.6	B	14.7	B	0.2	0.2	0.5	No
7	SR55 SB Off-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	0.0	0.0	No
8	SR55 NB On-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	0.0	0.0	No
9	Mimi's Café - SR55 NB Ramps / 17th St ◦ HCM Analysis	TS	0.523	A	0.728	C	0.594	A	0.527	A	0.894	D	0.606	B	0.004	0.166	0.012	No
		TS	20.5	C	22.6	C	26.1	C	20.7	C	23.2	C	26.9	C	0.2	0.6	0.8	No
10	Carroll Wy - Yorba St / 17th St	TS	0.547	A	0.675	B	0.591	A	0.551	A	0.691	B	0.599	A	0.004	0.016	0.008	No
11	Yorba St - Enderle Center Dr / 17th St	TS	0.598	A	0.650	B	0.531	A	0.599	A	0.663	B	0.535	A	0.001	0.013	0.004	No
12	Yorba St / Vandenberg Ln	TS	0.361	A	0.284	A	0.190	A	0.363	A	0.287	A	0.193	A	0.002	0.003	0.003	No
13	Tustin Ave / Annie's • Raised Median North Proj Dwy	CSS	31.1	D	74.8	F	16.8	C	31.7	D	190.5	F	25.1	D	0.6	115.7	8.3	Yes
		CSS							32.3	D	12.6	B	12.0	B	1.2	-62.2	-4.8	No
									201.5	F	2731.9	F	369.1	F	201.5	2731.9	369.1	Yes
									12.0	B	31.4	D	18.7	C	12.0	31.4	18.7	No
14	Tustin Ave / 7-Eleven South Proj Dwy • Raised Median + 3rd NB Thru Lane	CSS	41.2	E	14.4	B	13.6	B	43.0	E	15.0	C	14.4	B	1.8	0.6	0.8	No ³
		CSS							10.8	B	31.0	D	15.3	C	10.8	31.0	15.3	No
									11.9	B	34.1	D	17.7	C	11.9	34.1	17.7	No
15	Ponderosa St / Proj Dwy	CSS							8.5	A	8.6	A	8.7	A	8.5	8.6	8.7	No
16	Tustin Ave / Catalina Ave • Restrict EB/WB Left Turn	CSS	2492.1	F	1094.6	F	147.3	F	5366.9	F	2258.1	F	417.1	F	2874.8	1163.5	269.8	Yes
									34.3	D	27.9	D	15.8	C	-2457.8	-1066.7	-131.5	No

Note

- * Intersection Type: TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop; UNC = Uncontrolled
- 1 Signalized Intersections: Intersection Capacity Utilization (ICU) Analysis Method, Volume/Capacity (V/C) Ratio.
Unsignalized Intersections: Highway Capacity Manual (HCM) Analysis Method, Average Delay (seconds per vehicle).
- 2 Impacts at intersections are considered to be significant when the following changes in the volume-to-capacity (V/C) ratios occurs between the "without project" and the "with project" conditions, and operating at LOS E or worse:

<u>Level of Service</u>	<u>Change in V/C</u>
E, F	> 0.01
- 3 No impact to the Level of Service grade for unsignalized intersection.

6.4 Buildout 2035 Without Project Conditions Intersection Analysis

Table 9 summarizes the weekday AM, weekday PM and Saturday MD peak hour intersection operations analysis results for Buildout 2035 Without Project (2035nP) conditions, based on existing geometry. Appendix I includes the 2035nP conditions intersection operations analysis worksheets. As shown in Table 9, all study area intersections are projected to operate at LOS D or better, except for the following five (5) intersections:

1. Tustin Avenue at Santa Clara Avenue – LOS E (AM)
2. Tustin Avenue at 17th Street – LOS F (PM)
13. Tustin Avenue at Annie’s Salon & Spa Driveway – LOS E (AM); LOS F (PM)
14. Tustin Avenue at 7-Eleven Driveway – LOS F (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

6.5 Buildout 2035 With Project Conditions Intersection Analysis

Table 9 summarizes the weekday AM, weekday PM and Saturday MD peak hour intersection operations analysis results for Buildout 2035 With Project (2035wP) conditions, based on existing geometry. Appendix J includes the 2035wP conditions intersection operations analysis worksheets. As shown in Table 9, all study intersections are projected to operate at LOS D or better, except for the following five (5) intersections:

1. Tustin Avenue at Santa Clara Avenue – LOS E (AM)
2. Tustin Avenue at 17th Street – LOS F (PM)
13. Tustin Avenue at Annie’s Salon & Spa Driveway – LOS E (AM); LOS F (PM)
Tustin Avenue at North Project Driveway – LOS F (AM, PM and MD)
14. Tustin Avenue at 7-Eleven Driveway – LOS F (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

Table 9 shows that the project will contribute to a significant project impact at four (4) study intersections for Buildout 2035 With Project conditions based on the impact threshold criteria. Considering the curved geometry of Tustin Avenue, the design speed, and proper traffic circulation, the following 2035wP intersection improvements are recommended:

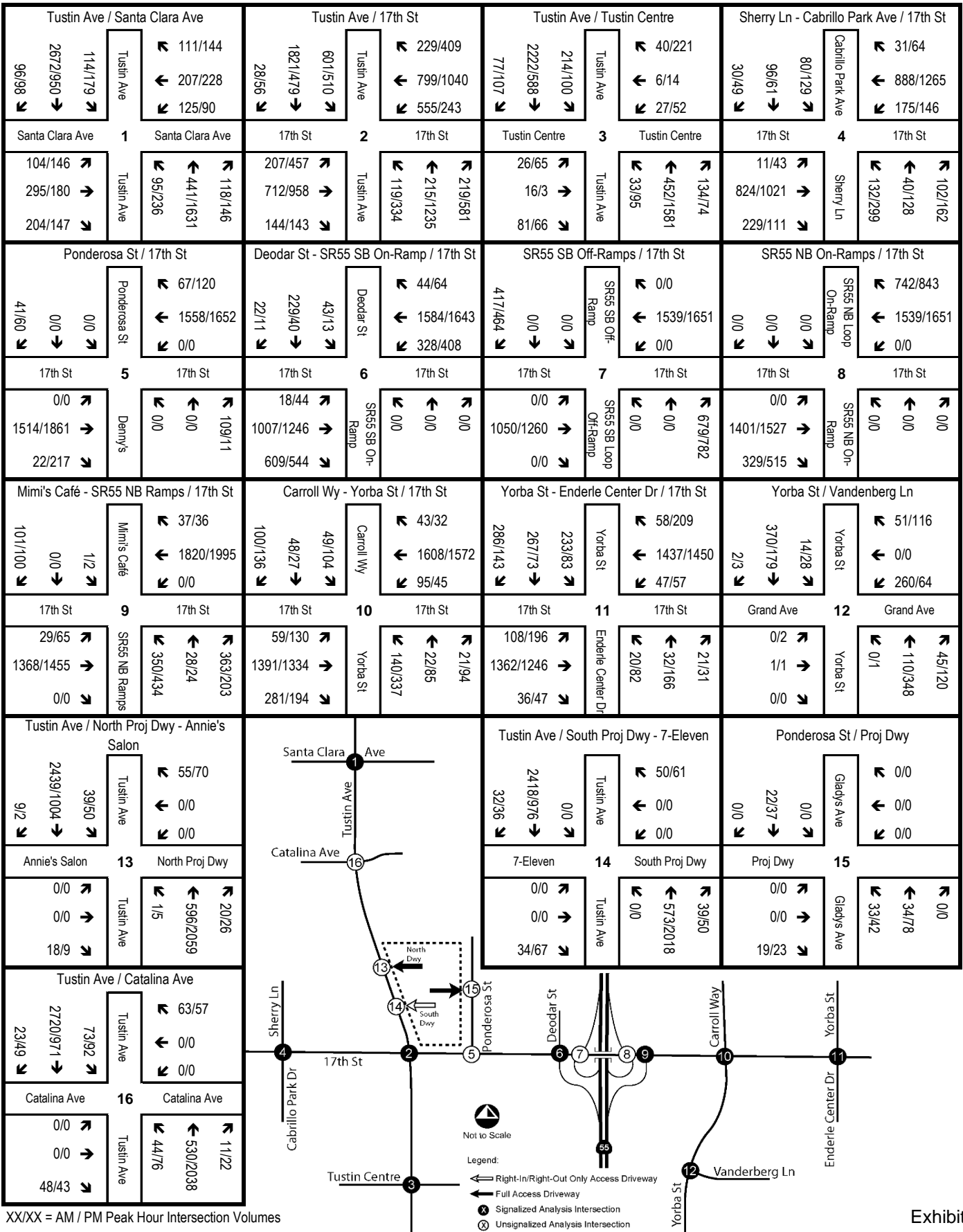
1. Tustin Avenue at Santa Clara Avenue
 - Provide a second northbound left turn lane
2. Tustin Avenue at 17th Street
 - Provide a third northbound through lane
13. Tustin Avenue at Annie’s Salon & Spa / North Project Driveway
 - Construct raised median to restrict left turn movements
 - Provide a third northbound through lane

16. Tustin Avenue at Catalina Avenue

- Restrict eastbound left turn movement
- Restrict westbound left turn movement

There is currently sufficient pavement width to accommodate a third northbound through lane on Tustin Avenue at 17th Street, and no right-of-way acquisition is necessary. With the recommended construction of a raised median, the westbound left turn movement at the north project driveway (Intersection #13) will redistribute by turning right from the north project driveway to go northbound on Tustin Avenue, and then making a northbound U-turn on either Tustin Avenue at Catalina Avenue (Intersection #2) or Tustin Avenue at Santa Clara Avenue (Intersection #1) to go southbound on Tustin Avenue. The redistributed weekday AM and PM peak hour intersection volumes are shown in Exhibit 28 for Buildout 2035 With Project conditions, with raised median. Exhibit 29 shows the redistributed Buildout 2035 With Project Saturday MD peak hour intersection volumes, with raised median.

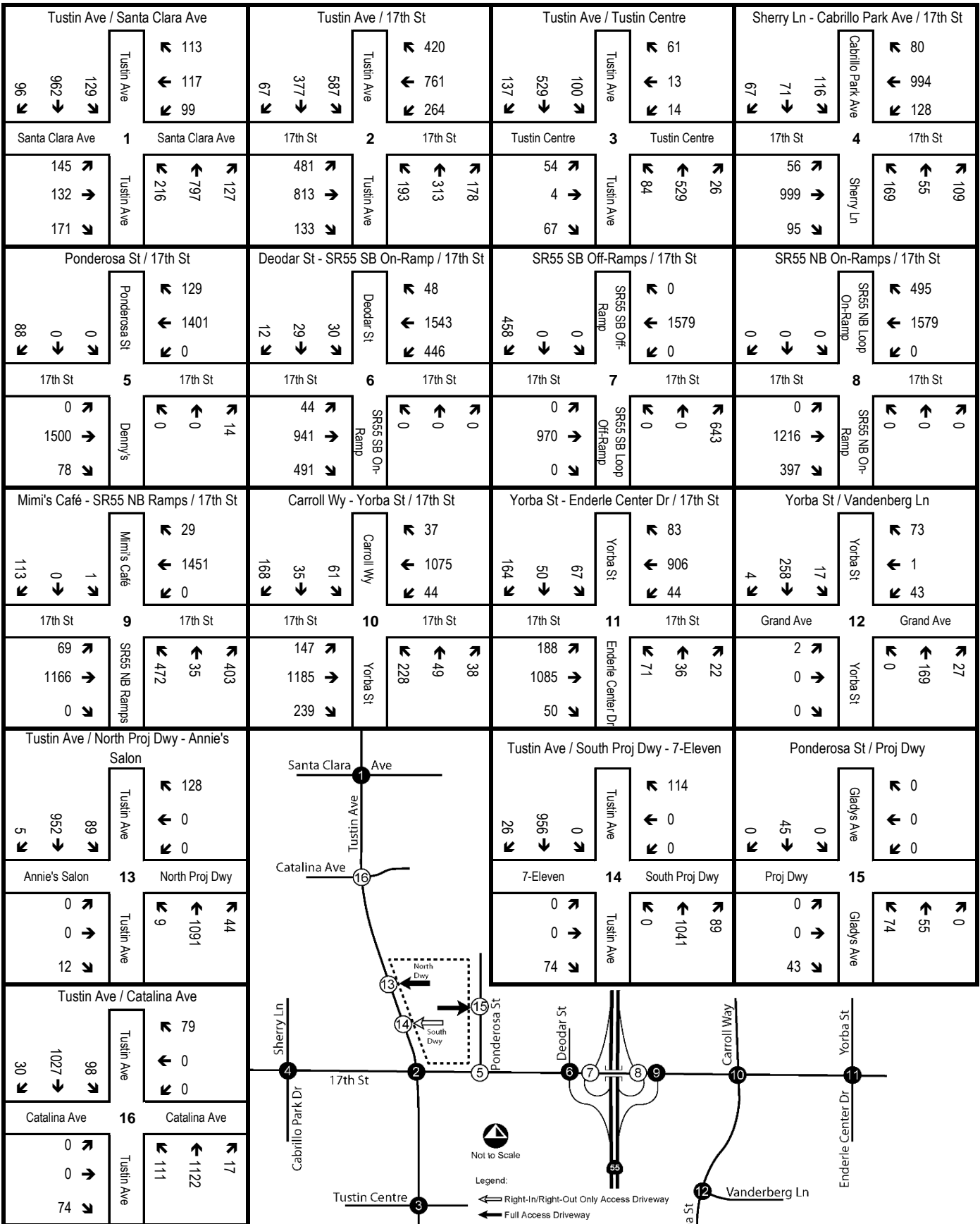
The mitigation recommendation, for constructing a raised median to restrict the north project driveway to right in/right out only, will span from the intersection of Tustin Avenue at Annie's Salon & Spa / North Project Driveway (Intersection #13) to Tustin Avenue at 17th Street (Intersection #2). Although the intersection of Tustin Avenue at 7-Eleven Driveway (Intersection #14) is not significantly impacted by the proposed project, implementation of this recommendation will have an ancillary effect on Intersection #14; changing Intersection #14 operation from full access to a right in/right out only. However, based on the existing traffic, this restriction will not result in a significant impact to Intersection #14.



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 26

Redistributed Opening Year 2018 With Project Weekday AM and PM Peak Hour Volumes, With Raised Median



XX = MD Peak Hour Intersection Volumes

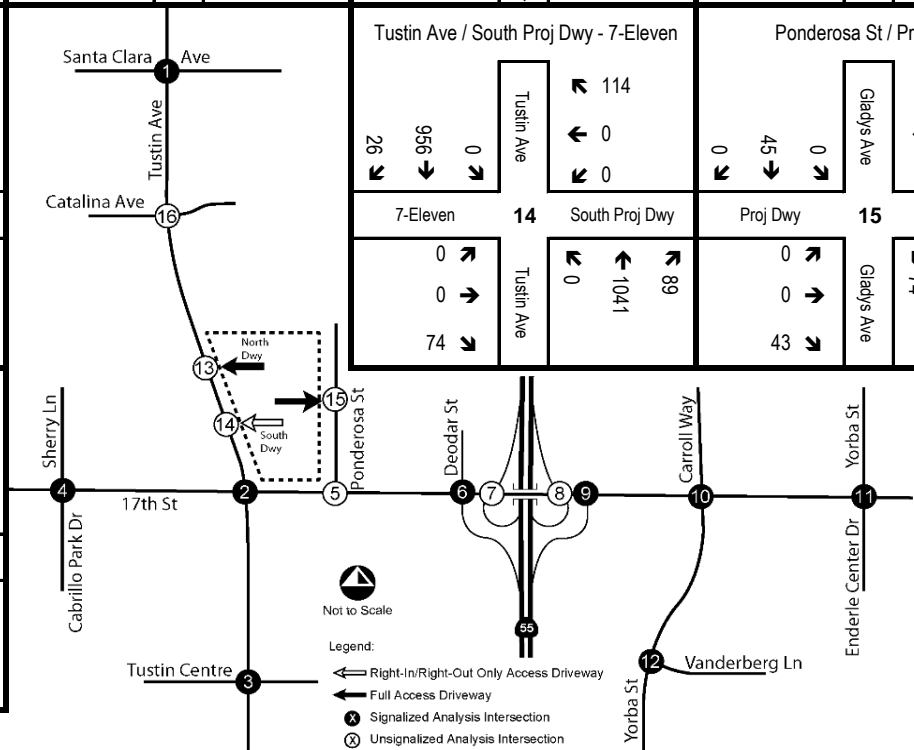


Exhibit 27
Redistributed Opening Year 2018 With Project
Saturday MD Peak Hour Volumes, With Raised Median

**Table 9
Buildout 2035 With Project Conditions Intersection Analysis Summary**

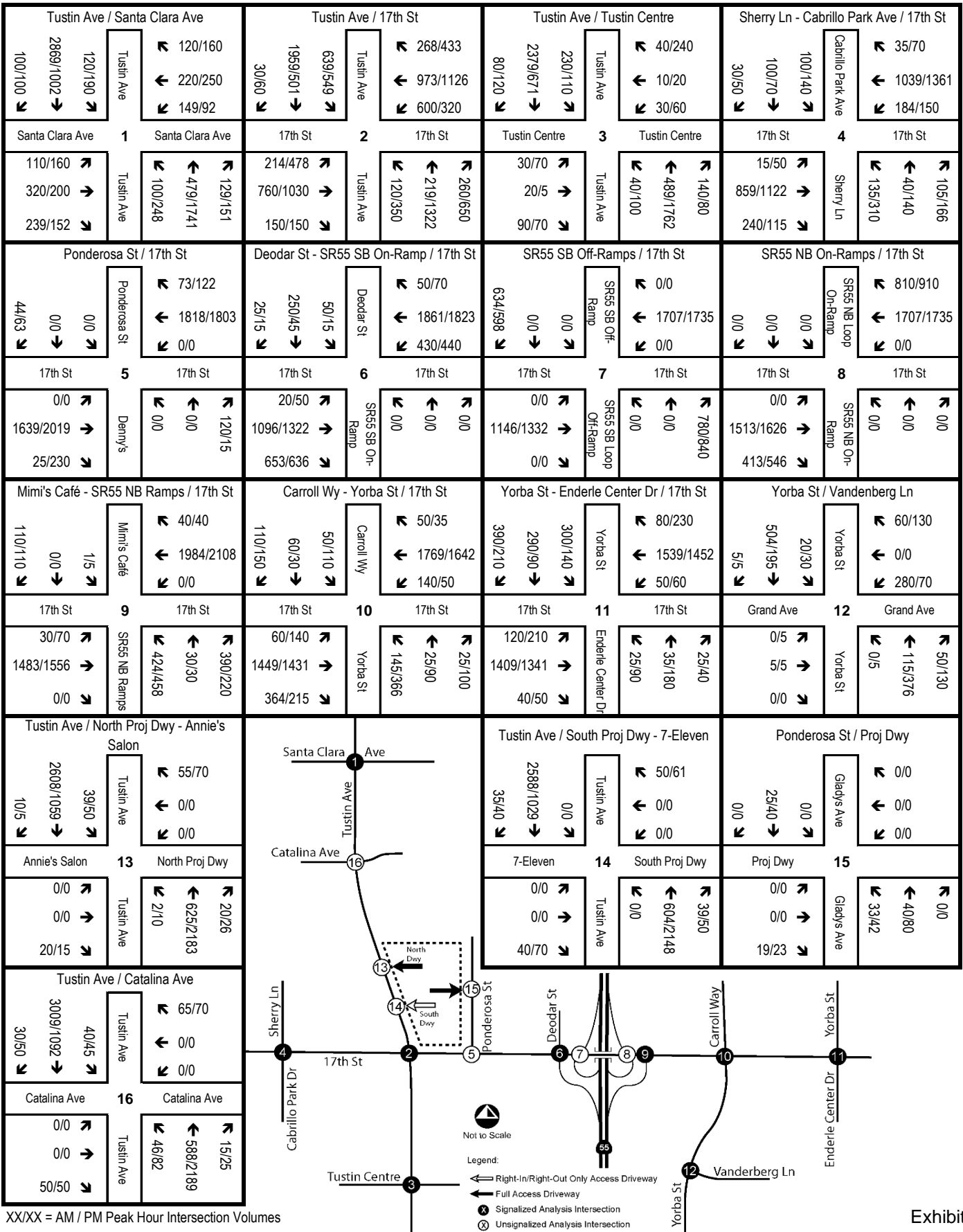
Intersection			(1) Buildout 2035 Without Project Conditions						(2) Buildout 2035 With Project Conditions						(3) Significant Project Impact			Project Impact ²	
			AM		PM		MD		AM		PM		MD		Increase				
No.	Name	Type*	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	V/C ¹	LOS	AM	PM	MD
1	Tustin Ave / Santa Clara Ave • 2nd NB Left Turn	TS	0.951	E	0.717	C	0.531	A	0.976	E	0.721	C	0.566	A	0.025	0.004	0.035	Yes	
									0.949	E	0.721	C	0.509	A	-0.002	0.004	-0.022	No	
2	Tustin Ave / 17th St • 3rd NB Thru Lane	TS	0.837	D	1.019	F	0.615	B	0.839	D	1.048	F	0.666	B	0.002	0.029	0.051	Yes	
									0.839	D	0.909	E	0.634	B	0.002	-0.110	0.019	No	
3	Tustin Ave / Tustin Centre	TS	0.654	B	0.651	B	0.323	A	0.656	B	0.653	B	0.327	A	0.002	0.002	0.004	No	
4	Sherry Ln - Cabrillo Park Ave / 17th St	TS	0.560	A	0.678	B	0.566	A	0.567	A	0.684	B	0.577	A	0.007	0.006	0.011	No	
5	17th St / Ponderosa St Denny's Dwy	CSS	14.2	B	15.1	C	12.8	B	15.1	C	16.5	C	14.5	B	0.9	1.4	1.7	No	
		CSS	12.9	B	14.0	B	11.5	B	13.1	B	14.2	B	11.7	B	0.2	0.2	0.2	No	
6	Deodar St - SR55 SB On-Ramp / 17th St ◦ HCM Analysis	TS	0.733	C	0.639	B	0.685	B	0.738	C	0.646	B	0.700	B	0.005	0.007	0.015	No	
		TS	24.1	C	14.2	B	16.3	B	24.4	C	14.3	B	16.8	B	0.3	0.1	0.5	No	
7	SR55 SB Off-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	0.0	0.0	No	
8	SR55 NB On-Ramps / 17th St	UNC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	0.0	0.0	No	
9	Mimi's Café - SR55 NB Ramps / 17th St ◦ HCM Analysis	TS	0.572	A	0.712	C	0.631	B	0.576	A	0.815	D	0.643	B	0.004	0.103	0.012	No	
		TS	23.4	C	26.2	C	28.0	C	23.8	C	27.1	C	29.0	C	0.4	0.9	1.0	No	
10	Carroll Wy - Yorba St / 17th St	TS	0.597	A	0.717	C	0.627	B	0.600	B	0.721	C	0.635	B	0.003	0.004	0.008	No	
11	Yorba St - Enderle Center Dr / 17th St	TS	0.695	B	0.706	C	0.562	A	0.697	B	0.709	C	0.567	A	0.002	0.003	0.005	No	
12	Yorba St / Vandenberg Ln	TS	0.426	A	0.308	A	0.201	A	0.427	A	0.310	A	0.204	A	0.001	0.002	0.003	No	
13	Tustin Ave / Annie's • Raised Median North Proj Dwy • Raised Median + 3rd NB Thru Lane	CSS	36.0	E	80.8	F	19.4	C	37.2	E	231.9	F	32.3	D	1.2	151.1	12.9	Yes	
		CSS							37.7	E	13.1	B	12.2	B	1.7	-67.7	-7.2	No	
		CSS							338.0	F	4123.3	F	475.7	F	338.0	4123.3	475.7	Yes	
		CSS							12.2	B	34.6	D	19.5	C	12.2	34.6	19.5	No	
14	Tustin Ave / 7-Eleven South Proj Dwy • Raised Median + 3rd NB Thru Lane	CSS	52.4	F	15.0	C	13.9	B	55.6	F	15.5	C	14.8	B	3.2	0.5	0.9	No ³	
		CSS							11.0	B	35.5	E	15.8	C	11.0	35.5	15.8	No	
		CSS							12.1	B	34.5	D	18.4	C	12.1	34.5	18.4	No	
15	Ponderosa St / Proj Dwy	CSS						8.5	A	8.6	A	8.7	A	8.5	8.6	8.7	No		
16	Tustin Ave / Catalina Ave • Restrict EB/WB Left Turn	CSS	5551.8	F	2440.9	F	156.9	F	7912.9	F	5443.2	F	456.7	F	2361.1	3002.3	299.8	Yes	
		CSS							34.8	D	34.1	D	17.1	C	-5517.0	-2406.8	-139.8	No	

Note

- * Intersection Type: TS = Traffic Signal; AWS = All-Way Stop; CSS = Cross-Street Stop; UNC = Uncontrolled
- ¹ Signalized Intersections: Intersection Capacity Utilization (ICU) Analysis Method, Volume/Capacity (V/C) Ratio.
Unsignalized Intersections: Highway Capacity Manual (HCM) Analysis Method, Average Delay (seconds per vehicle).
- ² Impacts at intersections are considered to be significant when the following changes in the volume-to-capacity (V/C) ratios occurs between the "without project" and the "with project" conditions, and operating at LOS E or worse:

<u>Level of Service</u>	<u>Change in V/C</u>
E, F	> 0.01

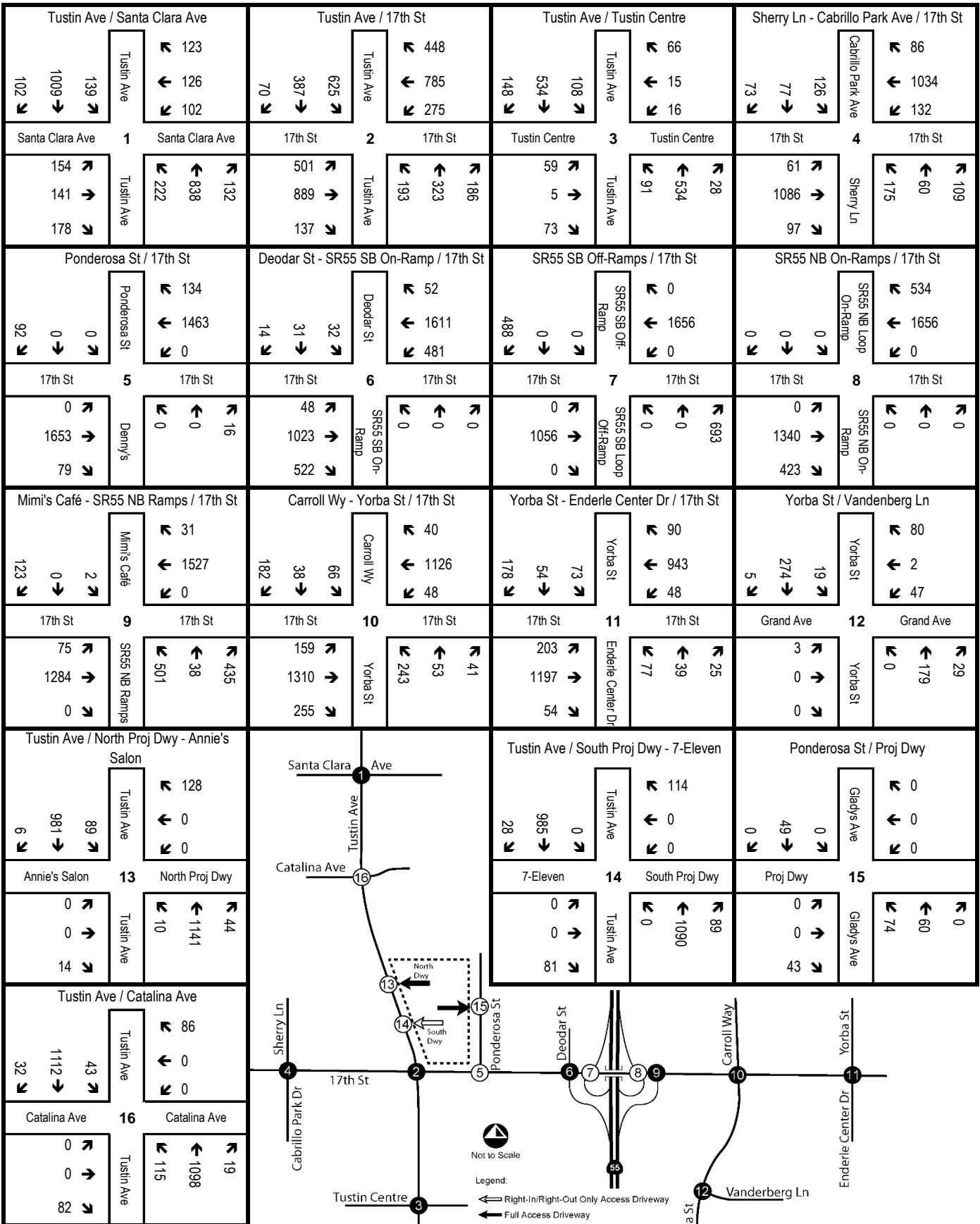
- ³ No impact to the Level of Service grade for unsignalized intersection.



XX/XX = AM / PM Peak Hour Intersection Volumes

Exhibit 28

**Redistributed Buildout Year 2035 With Project
Weekday AM and PM Peak Hour Volumes, With Raised Median**



XX = MD Peak Hour Intersection Volumes

Exhibit 29

**Redistributed Buildout Year 2035 With Project
Saturday MD Peak Hour Volumes, With Raised Median**

7.0 ON-SITE CIRCULATION

This section presents on-site parking assessment and the drive-through lane queueing assessment.

7.1 Parking Requirement

This study evaluates the adequacy of the off-street parking supply of the proposed project based on the County of Orange’s parking ordinances. The County requires one space per 100 square feet of area up to 4,000 square feet, and then one space per 80 square feet for area over 4,000 square feet. Table 10 shows the parking requirement calculations. As shown in Table 10, the project is required to provide 103 parking spaces based on County’s parking requirement. Since the project is providing 104 parking spaces, there is adequate parking supply with a surplus of one parking space.

Table 10 – Parking Requirement

Use	Quantity	Parking Ratio (Space:SF)	Required Spaces
Chick-fil-A	5,577 SF ¹	1: 100 ≤ 4,000 SF	40
		1: 80 > 4,000 SF	20
		Subtotal (Chick-fil-A)	60
In-N-Out	4,267 SF ¹	1: 100 ≤ 4,000 SF	40
		1: 80 > 4,000 SF	3
		Subtotal (In-N-Out)	43
Total Required Spaces			103
Spaces Provided by the Project			104
Surplus Parking			1

Note:

¹ Includes outdoor dining area

7.2 Drive-Through Lane Queuing Assessment

The traffic study assess the drive-through lane queue at the proposed In-N-Out project based on sample surveys collected at the following three sites in Orange County:

- Santa Ana: 815 North Bristol Street
- Costa Mesa: 3211 Harbor Boulevard
- Orange: 2585 North Tustin Street

The survey sites are selected because they are similar to the surrounding conditions of the proposed project site such that they are located near a freeway and there are some nearby retail developments. The survey sites also have the newer design configuration similar to the proposed project which has larger indoor dining room in comparison to the older design of In-N-Out

restaurants that may only have outdoor dining tables. The Santa Ana survey site was specifically requested by the City of Santa Ana where Bristol Street has recently been widened and a dedicated right turn lane was provided for the Santa Ana In-N-Out.

For these three survey locations, drive-through queue data is collected during the weekday mid-day period (11:00 AM to 1:00 PM), the weekday PM peak period (4:00 PM to 6:00 PM) and the Saturday mid-day period (12:00 PM to 2:00 PM). The drive-through vehicular queues were observed and documented in 15-minute intervals within each count period. Table 11 summarizes the observed drive-through lane queue data collected at the three In-N-Out sites in Orange County. Appendix K includes the drive-through lane queuing survey data sheets.

Table 11 – Existing Orange County In-N-Out Drive-Through Lane Queue Observations

Observed ¹ Drive-Through Queue					Average Peak Queue Length	Average Peak Queue Exceeded 14-Vehicle Storage Capacity ²
Day	Time	Santa Ana 815 N Bristol St	Costa Mesa 3211 Harbor Blvd	Orange 2585 N Tustin St		
Weekday Mid-Day	11:00 AM - 11:15 AM	8	17 ²	10	12	
	11:15 AM - 11:30 AM	11	18 ²	9	13	
	11:30 AM - 11:45 AM	13	16 ²	12	14	
	11:45 AM - 12:00 PM	15 ²	20 ²	13	16	2
	12:00 PM - 12:15 PM	17 ²	21 ²	12	17	3
	12:15 PM - 12:30 PM	17 ²	19 ²	15 ²	17	3
	12:30 PM - 12:45 PM	12	22 ²	14	16	2
	12:45 PM - 1:00 PM	10	21 ²	15 ²	15	1
	Peak Queue	17 ²	22 ²	15 ²	18	4
Weekday PM	4:00 PM - 4:15 PM	17 ²	9	8	11	
	4:15 PM - 4:30 PM	14	8	9	10	
	4:30 PM - 4:45 PM	12	11	13	12	
	4:45 PM - 5:00 PM	15 ²	9	12	12	
	5:00 PM - 5:15 PM	11	8	15 ²	11	
	5:15 PM - 5:30 PM	5	10	10	8	
	5:30 PM - 5:45 PM	12	13	9	11	
	5:45 PM - 6:00 PM	8	15 ²	8	10	
	Peak Queue	17 ²	15 ²	15 ²	16	2
Saturday Mid-Day (MD)	12:00 PM - 12:15 PM	12	16 ²	18 ²	15	1
	12:15 PM - 12:30 PM	15 ²	18 ²	20 ²	18	4
	12:30 PM - 12:45 PM	17 ²	19 ²	23 ²	20	6
	12:45 PM - 1:00 PM	17 ²	21 ²	22 ²	20	6
	1:00 PM - 1:15 PM	16 ²	18 ²	21 ²	18	4
	1:15 PM - 1:30 PM	17 ²	20 ²	23 ²	20	6
	1:30 PM - 1:45 PM	17 ²	21 ²	18 ²	19	5
	1:45 PM - 2:00 PM	17 ²	20 ²	16 ²	18	4
	Peak Queue	17 ²	21 ²	23 ²	20	6

Note: ¹ See Appendix K for survey data sheets.

² The peak drive-through queue is longer than the proposed drive-through lane which has a minimum storage of 14 vehicles. Additional vehicles may queue on-site along the parking lot access aisles.

As shown in Table 11, the average peak vehicular queue lengths are 18 vehicles for weekdays and 20 vehicles for Saturdays. Based on the project site plan (Exhibit 2), the proposed In-N-Out project provides a queue storage capacity for approximately 14 vehicles. Based on the average peak drive-through queue lengths shown in Table 11, the drive-through storage capacity is forecast to be exceeded by 4 and 6 vehicles during the weekday and Saturday peak periods.

For reference purpose, Table 12 shows the historic drive-through queue survey data at the following eight (8) existing In-N-Out sites in Los Angeles County and Northern California where the weekday PM data is readily available:

1. Millbrae – 11 Rollins Road, Millbrae, CA
2. Redwood City – 949 Veterans Boulevard, Redwood City, CA
3. San Carlos – 445 Industrial Road, San Carlos, CA
4. Rocklin – 5490 Crossings Drive, Rocklin, CA
5. Vacaville – 170 Nut Tree Parkway, Vacaville, CA
6. Fairfield – 1364 Holiday Lane, Fairfield, CA
7. Long Beach – 6391 East Pacific Coast Highway, Long Beach, CA
8. Los Angeles – 9149 South Sepulveda Boulevard, Los Angeles, CA

As shown in Table 12, the historic drive-through queue data from other 8 In-N-Out sites are consistent to the three Orange County sites. Please note that only the weekday PM data is available for these other 8 locations. These other survey sites also have the newer design configuration similar to the proposed project which has larger indoor dining room in comparison to the older design of In-N-Out restaurants that may only have outdoor dining tables.

Table 12 – Other Comparable In-N-Out Drive-Through Lane Queue Observations

Day	Time	Observed ¹ Drive-Through Queue											Average Queue
		Santa Ana	Costa Mesa	Orange	Millbrae	Redwood City	San Carlos	Rocklin	Vacaville	Fairfield	Long Beach	Los Angeles	
Weekday PM	4:00 - 4:15 PM	17	9	8	13	14	17	5	11	5	6	17	11
	4:15 - 4:30 PM	14	8	9	14	16	16	8	14	8	5	15	12
	4:30 - 4:45 PM	12	11	13	15	16	16	7	16	9	3	12	12
	4:45 - 5:00 PM	15	9	12	14	15	16	6	17	16	6	10	12
	5:00 - 5:15 PM	11	8	15	13	14	16	8	13	17	5	9	12
	5:15 - 5:30 PM	5	10	10	15	14	16	9	11	16	7	14	12
	5:30 - 5:45 PM	12	13	9	16	15	17	11	13	8	7	17	13
	5:45 - 6:00 PM	8	15	8	15	15	17	12	18	17	5	19	14
	Peak Queue	17	15	15	16	16	17	12	18	17	7	19	15 ²

Note:

- ¹ See Appendix K for survey data sheets.
- ² The average peak observed drive-through queue is longer than the proposed drive-through lane has a storage of 14 vehicles. Additional vehicles may queue on-site along the parking lot access aisles.

During the peak periods when the drive-through lane queue exceeds the 14-vehicle storage capacity, In-N-Out will provide personnel to take food orders at the end of the drive-thru queue to facilitate circulation and minimize the drive-thru queue. The standard operational procedure for In-N-Out is to deploy associates with handheld wireless order tablets as soon as the queue exceeds 8 vehicles at the menu board, which will help facilitate efficient movements through the queue and direct traffic as needed. When In-N-Out provides personnel to take customer orders at the drive-through, it minimizes the drive-through queue by expediting customer orders, allowing In-N-Out associates to prepare the food earlier, which results in customers getting their food faster once they reach the drive-through pick-up window. This results in the In-N-Out drive-through queue to dissipate faster. The staging for the overflow drive-thru queue could be addressed by the store associates implementing traffic control measures to align the traffic to line up along the parking aisle to avoid spilling onto the street. Appendix L shows the recommended traffic control measures. “Right Turn Only” signage should be placed at the westbound exit approaches of the

northerly project driveway (Intersection #13) and the southerly project driveway (Intersection #14) at Tustin Avenue, as shown in Appendix L.

The Chick-fil-A restaurant will have two drive-through lanes with a storage for 30 vehicles. The Chick-fil-A drive-through queue is anticipated to be similar to the In-N-Out queue. Therefore, the proposed storage of 30 vehicles for Chick-fil-A should be adequate. Similar to In-N-Out, Chick-fil-A also deploys associates with handheld wireless order tablets as soon as the queue builds up past the order kiosks. According to Chick-fil-A, their associates are able to fully serve their drive-through customers (from ordering to picking up their food) in an average time of one-minute. If drive-through demand does exceed the available storage Chick-fil-A staff can provide circulation control using traffic cones and signage to direct the queuing to specified areas within the on-site parking lot to avoid disruption of off-site traffic circulation.

7.3 Project Driveway Queuing Analysis

Vehicular queueing analysis is assessed at the two project driveways on Tustin Avenue and the project driveway on Ponderosa Street. The 95th percentile vehicular queue is calculated based on the Highway Capacity Manual (HCM) method using the Synchro analysis software. The queue length is calculated based on a typical car length of 25 feet per vehicle. Table 13 summarizes the project driveway queuing analysis with an initial geometry of a full access at the north project driveway (Intersection #13). Appendix M includes the queuing analysis worksheets for the analysis conditions with an initial geometry of a full access at the north project driveway.

Table 13 – Project Driveway Queueing Analysis Summary with a Full Access at the North Project Driveway

Intersection		Available Storage Length	Adequate Storage Length?	Maximum Queue Length ¹	95th Percentile Vehicular Queue								
					Existing Plus Project			2018 With Project			2035 With Project		
No.	Name				AM	PM	MD	AM	PM	MD	AM	PM	MD
13	Tustin Ave / North Proj Dw y	100'	Yes	0'	-	-	-	-	-	-	-	-	-
	• NB Right Turn In	100'	Yes	25'	0.1	0.8	0.5	0.1	0.9	0.5	0.1	1.0	0.6
	• SB Left Turn In	60' +	No	350'	3.9	10.3	9.1	4.4	10.5	10.0	5.7	11.0	13.3
	• WB Left/Right Turn Out (Full Access)	Parking Aisle ²											
14	Tustin Ave / South Proj Dw y	100'	Yes	0'	-	-	-	-	-	-	-	-	-
	• NB Right Turn In	50' +	Yes	50'	0.2	1.2	0.8	0.2	1.3	0.9	0.3	1.4	1.1
	• WB Right Turn Out	Parking Aisle ²											
15	Ponderosa St / Proj Dw y	n/a	Yes	25'	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2
	• NB Left Turn In	n/a	Yes	0'	-	-	-	-	-	-	-	-	-
	• SB Right Turn In	50' +	Yes	25'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	• EB Right Turn Out	Parking Aisle ²											

Note

- ¹ Maximum queue length rounded up to vehicle length of 25 feet per vehicle.
- ² For existing traffic, the available storage length includes the length of the throat at the driveway and parking access aisle.

As shown in Table 13, there are adequate storage for the inbound and outbound queuing vehicles

except for the westbound outbound movement at the north project driveway (Intersection #13) where there is high queue length due to the high delay experienced by the westbound left turn traffic.

The recommendation from the intersection analysis (Section 6) is that the westbound left turn movement should be restricted at the north project driveway. With the recommended westbound left turn restriction at the north project driveway (Intersection #13), the westbound left turn traffic will redistribute by turning right from the north project driveway to go northbound on Tustin Avenue, and then making a northbound U-turn on either Tustin Avenue at Catalina Avenue (Intersection #16) or Tustin Avenue at Santa Clara Avenue (Intersection #1) to go southbound on Tustin Avenue. Table 14 summarize the project driveway queuing analysis with the recommended westbound left turn restriction at the north project driveway. As shown in Table 14, there is no queuing issue at the north project driveway with the recommended westbound left turn restriction. Appendix N includes the queuing analysis worksheets for the analysis conditions with the recommended westbound left turn restriction at the north project driveway. “Right Turn Only” signage should be placed at the westbound exit approaches of the northerly project driveway (Intersection #13) and the southerly project driveway (Intersection #14) at Tustin Avenue, as shown in Appendix L.

Table 14 – Project Driveway Queuing Analysis Summary with Westbound Left Turn Restriction at the North Project Driveway

Intersection		Available Storage Length	Adequate Storage Length?	Maximum Queue Length ¹	95th Percentile Vehicular Queue								
					Existing Plus Project			2018 With Project			2035 With Project		
No.	Name				AM	PM	MD	AM	PM	MD	AM	PM	MD
13	Tustin Ave / North Proj Dw y • NB Right Turn In • SB Left Turn In • WB Right Turn Out (Left Turn Restriction)	100'	Yes	0'	-	-	-	-	-	-	-	-	-
		100'	Yes	100'	0.2	2.4	1.0	0.2	2.6	1.1	0.3	3.3	1.5
		60' + Parking Aisle ²	Yes	50'	0.3	1.4	1.4	0.3	1.5	1.4	0.4	1.7	1.8
14	Tustin Ave / South Proj Dw y • NB Right Turn In • WB Right Turn Out	100'	Yes	0'	-	-	-	-	-	-	-	-	-
		50' + Parking Aisle ²	Yes	50'	0.3	1.4	1.1	0.3	1.5	1.2	0.3	1.5	1.5
15	Ponderosa St / Proj Dw y • NB Left Turn In • SB Right Turn In • EB Right Turn Out	n/a	Yes	25'	0.1	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.2
		n/a	Yes	0'	-	-	-	-	-	-	-	-	-
		50' + Parking Aisle ²	Yes	25'	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note

- ¹ Maximum queue length rounded up to vehicle length of 25 feet per vehicle.
- ² For exiting traffic, the available storage length includes the length of the throat at the driveway and parking access aisle.

For the project driveway on Ponderosa Street, nominal amount of project traffic is anticipated to go north on Ponderosa Street because it is a low-volume residential street and the project will likely attract pedestrian traffic instead of vehicular traffic from adjacent residential neighborhood

north of the project site. Therefore, even though the project driveway on Ponderosa Street is proposed to be a full access, the westbound left turn and southbound right turn traffic at the Ponderosa Street driveway will be very low which will not adversely impact the traffic circulation on Ponderosa Street. If City of Santa Ana prefers that the Ponderosa Street driveway be a limited access, the driveway may be limited to a northbound left-in/eastbound right-out only access which will not adversely impact the circulation of the project site.

7.4 Bus Stop Location

There is currently a northbound bus stop located on Tustin Avenue adjacent to the project site. It is recommended that the bus stop be relocated to the far side of the intersection of Tustin Avenue and 17th Street. The applicant is coordinating with Orange County Transportation Authority (OCTA) to incorporate the bus stop location in the project plan. OCTA has provided the design guidelines for the bus stop which is included in Appendix O. Based on the latest site plan, the third through lane is providing a lane width of 29' where the new proposed bus stop is located. This allows plenty of space for a bus to pullover for a stop, while also allowing vehicles to continue without being blocked by the bus.

7.5 Sight Distance Analysis

The sight distance has been assessed for:

- Southbound left turn lane on Tustin Avenue into the north project driveway
- North project driveway from the access road

Appendix P shows the sight distance analysis on the southbound left turn lane on Tustin Avenue into the north project driveway, and the north project driveway from the access road. In accordance with the criteria contained in the *Highway Design Manual*, Section 201.1 and Section 201.7 (December 2016) published by California Department of Transportation (Caltrans), a minimum sight distance of 600 feet should be provided for a design speed of 40 miles per hour to allow drivers time for decisions without making last minute erratic maneuvers. There is enough sight distance provided for the southbound left turn lane on Tustin Avenue into the north project driveway to allow for enough time for the driver to decide and make a safe turn. There are currently no obstructions within the line of sight area, and any objects placed in the area should be no taller than three and a half feet.

The sight distance from the frontage access road (south driveway) to the northerly project driveway is approximately 140 feet with a clear line of sight, and there is no critical horizontal or vertical street curvature for this segment of Tustin Avenue. On-street parking is prohibited between the frontage access road (south driveway) and the northerly project driveway. Any objects that are proposed to be placed within the line of sight area should be no taller than three and a half feet.

8.0 CONCLUSIONS

The project site is located north of 17th Street between Tustin Avenue and Ponderosa Street. The project site is currently vacant. The project proposes to construct two fast food restaurants with drive-through lanes. The Chick-fil-A fast building will be 4,777 square feet with an additional 800 square feet of outdoor dining area for a total of 5,577 square feet, and it will have two drive-through lanes for a queue storage for 30 vehicles. The In-N-Out building will be 3,867 square feet with an outdoor patio area of 400 square feet for a total of 4,267 square feet, and it will have a drive-through lane for a queue storage of 14 vehicle. The project is anticipated to generate 3,419 net daily trips with 177 net AM peak hour trips, 225 net PM peak hour trips and 406 net Saturday mid-day trips.

8.1 Intersection Analysis Results

For existing traffic conditions, all study area intersections are operating at LOS D or better, except at the following locations:

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie's Salon & Spa Driveway – LOS F (PM)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

For Existing plus Project (EP) conditions, all study area intersections are projected to operate at LOS D or better, except for the following four (4) intersections:

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie's Salon & Spa Driveway – LOS F (PM)
Tustin Avenue at North Project Driveway – LOS F (AM, PM and MD)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Ave – LOS F (AM, PM and MD)

The results of the intersection analysis indicate that the project will contribute to a significant project impact at three (3) study intersections for Existing plus Project (EP) conditions based on the impact threshold criteria. Considering the curved geometry of Tustin Avenue, the design speed, and proper traffic circulation, the following EP intersection improvements are recommended:

2. Tustin Avenue at 17th Street
 - Provide a third northbound through lane
13. Tustin Avenue at Annie's Salon & Spa / North Project Driveway
 - Construct raised median to restrict left turn movements
 - Provide a third northbound through lane
16. Tustin Avenue at Catalina Avenue
 - Restrict eastbound left turn movement
 - Restrict westbound left turn movement

The mitigation recommendation, for constructing a raised median to restrict the north project driveway to right in/right out only, will span from the intersection of Tustin Avenue at Annie's Salon & Spa / North Project Driveway (Intersection #13) to Tustin Avenue at 17th Street (Intersection #2). Although the intersection of Tustin Avenue at 7-Eleven Driveway (Intersection #14) is not significantly impacted by the proposed project, implementation of this recommendation will have an ancillary effect on Intersection #14; changing Intersection #14 operation from full access to a right in/right out only. However, based on the existing traffic, this restriction will not result in a significant impact to Intersection #14.

For Opening Year 2018 Without Project (2018nP) conditions, all study intersections are projected to operate at LOS D or better, except for the following four (4) intersections:

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie's Salon & Spa Driveway – LOS F (PM)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM and MD)

For Opening Year 2018 With Project (2018wP) conditions, all study area intersections are projected to operate at LOS D or better, except for the following four (4) intersections:

2. Tustin Avenue at 17th Street – LOS E (PM)
13. Tustin Avenue at Annie's Salon & Spa Driveway – LOS F (PM)
Tustin Avenue at North Project Driveway – LOS F (AM, PM and MD)
14. Tustin Avenue at 7-Eleven Driveway – LOS E (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

The results of the intersection analysis indicate that the project will contribute to a significant project impact at three (3) study intersections for Opening Year 2018 With Project (2018wP) conditions based on the impact threshold criteria. Other than the EP improvements, no additional 2018wP intersection improvements are recommended.

For Buildout 2035 Without Project (2035nP) conditions, all study area intersections are projected to operate at LOS D or better, except for the following five (5) intersections:

1. Tustin Avenue at Santa Clara Avenue – LOS E (AM)
2. Tustin Avenue at 17th Street – LOS F (PM)
13. Tustin Avenue at Annie's Salon & Spa Driveway – LOS E (AM); LOS F (PM)
14. Tustin Avenue at 7-Eleven Driveway – LOS F (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

For Buildout 2035 With Project (2035wP) conditions, all study intersections are projected to operate at LOS D or better, except for the following five (5) intersections:

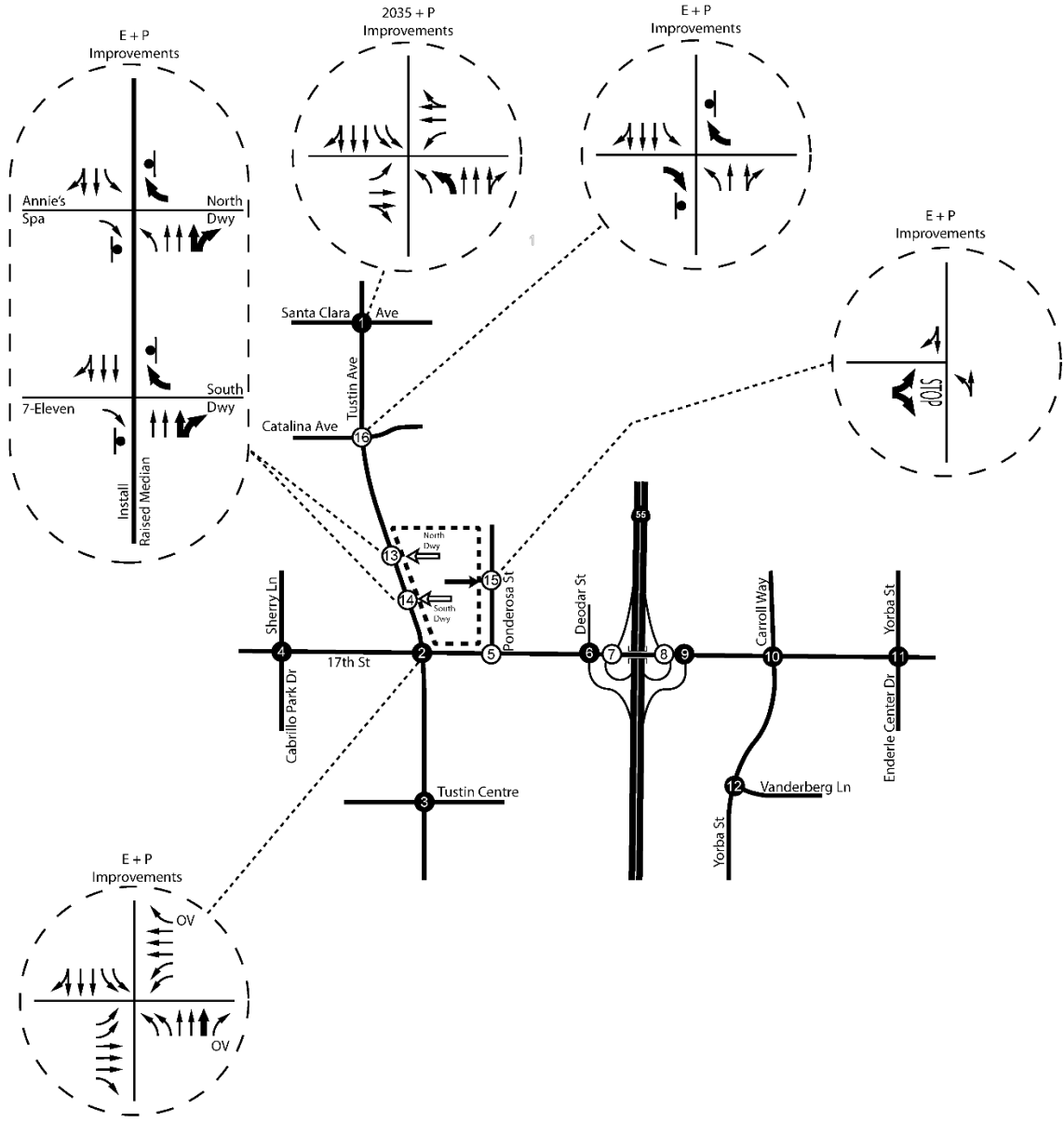
1. Tustin Avenue at Santa Clara Avenue – LOS E (AM)
2. Tustin Avenue at 17th Street – LOS F (PM)
13. Tustin Avenue at Annie's Salon & Spa Driveway – LOS E (AM); LOS F (PM)
Tustin Avenue at North Project Driveway – LOS F (AM, PM and MD)
14. Tustin Avenue at 7-Eleven Driveway – LOS F (AM)
16. Tustin Avenue at Catalina Avenue – LOS F (AM, PM, and MD)

The results of the intersection analysis indicate that the project will contribute to a significant project impact at four (4) study intersections for Buildout 2035 With Project conditions based on the impact threshold criteria. In addition to the EP and 2018wP improvements, the following additional 2035wP intersection improvements are recommended:

1. Tustin Avenue at Santa Clara Avenue
 - Provide a second northbound left turn lane

Exhibit 30 illustrates the recommended intersection improvements for EP, 2018wP and 2035wP conditions at the study area intersections. “Right Turn Only” signage should be placed at the westbound exit approaches of the northerly project driveway (Intersection #13) and the southerly project driveway (Intersection #14) at Tustin Avenue, as shown in Appendix L.

Exhibit 30 – Recommended Intersection Improvements



- Legend:
- Project Site
 - Right-In/Right-Out Only Access Driveway
 - Full Access Driveway
 - Free Right-Turn
 - Right-Turn Overlap
 - Signalized Analysis Intersection
 - Unsignalized Analysis Intersection
 - Lane Improvements
 - Right-Turn Only Sign

8.2 Parking Analysis Results

This study evaluates the adequacy of the off-street parking supply of the proposed project based on the County of Orange's parking ordinances. The County requires one space per 100 square feet of area up to 4,000 square feet, and then one space per 80 square feet for area over 4,000 square feet. The project is required to provide 103 parking spaces based on County's parking requirement. Since the project is providing 104 parking spaces, there is adequate parking supply with a surplus of one parking space.

8.3 Drive-Through Queuing Analysis Results

The traffic study assesses the drive-through lane queue at the proposed In-N-Out project based on sample surveys collected at three sites in Orange County (Santa Ana, Costa Mesa and Orange) These survey sites are selected because they are similar to the surrounding conditions of the proposed project site such that they are located near a freeway and there are some nearby retail developments. The survey sites also have the newer design configuration similar to the proposed project which has larger indoor dining room in comparison to the older design of In-N-Out restaurants that may only have outdoor dining tables. The Santa Ana survey site was specifically requested by the City of Santa Ana where Bristol Street has recently been widened and a dedicated right turn lane was provided for the Santa Ana In-N-Out. Based on the field observations on these 3 survey sites in Orange County, the average peak vehicular queue lengths are 18 vehicles for weekdays and 20 vehicles for Saturdays. The proposed project provides a vehicular queue storage capacity for approximately 14 vehicles. Therefore, the drive-through storage capacity is forecast to be exceeded by 4 and 6 vehicles during the weekday and Saturday peak periods.

During the peak periods when the drive-through lane queue exceeds the 14-vehicle storage capacity, In-N-Out will provide personnel to take food orders at the end of the drive-thru queue to facilitate circulation and minimize the drive-thru queue. The standard operational procedure for In-N-Out is to deploy associates with handheld wireless order tablets as soon as the queue exceeds 8 vehicles at the menu board, which will help facilitate efficient movements through the queue and direct traffic as needed. The staging for the overflow drive-thru queue could be addressed by the store associates implementing traffic control measures to align the traffic to line up along the parking aisle to avoid spilling onto the street. Appendix L shows the recommended traffic control measures. "Right Turn Only" signage should be placed at the westbound exit approaches of the northerly project driveway (Intersection #14) and the southerly project driveway (Intersection #15) at Tustin Avenue, as shown in Appendix L.

Another option for In-N-Out is that the store associates could direct the overflow queuing vehicles to park at vacant parking spaces when the drive-through queue length reach the capacity of 14 vehicles. The drive-through queue length would be monitored by store associates so that the queue length will not exceed 14 vehicles and that the parking lot circulation aisles will remain clear.

The Chick-fil-A restaurant will have two drive-through lanes with a storage for 30 vehicles. The Chick-fil-A drive-through queue is anticipated to be similar to the In-N-Out queue. Therefore, the proposed storage of 30 vehicles for Chick-fil-A should be adequate. If drive-through demand does exceed the available storage Chick-fil-A staff can provide circulation control using traffic cones and signage to direct the queuing to specified areas within the on-site parking lot to avoid disruption of on-site traffic circulation.

8.4 Project Driveway Queuing Analysis Results

Vehicular queuing analysis is assessed at the two project driveways on Tustin Avenue and the project driveway on Ponderosa Street. The 95th percentile vehicular queue is calculated based on the Highway Capacity Manual (HCM) method using the Synchro analysis software. The queue length is calculated based on a typical car length of 25 feet per vehicle.

Based on the project driveway queuing analysis with an initial geometry of a full access at the north project driveway (see Table 13), there are adequate storage for the inbound and outbound queuing vehicles except for the westbound outbound movement at the north project driveway (Intersection #13) where there is high queue length due to the high delay experienced by the westbound left turn traffic.

The recommendation from the intersection analysis (Section 6) is that the westbound left turn movement should be restricted at the north project driveway. With the recommended westbound left turn restriction at the north project driveway (Intersection #13), the westbound left turn traffic will redistribute by turning right from the north project driveway to go northbound on Tustin Avenue, and then making a northbound U-turn on either Tustin Avenue at Catalina Avenue (Intersection #16) or Tustin Avenue at Santa Clara Avenue (Intersection #1) to go southbound on Tustin Avenue. Based on the project driveway queuing analysis with the recommended westbound left turn restriction at the north project driveway (see Table 13), there is no queuing issue at the north project driveway with the recommended westbound left turn restriction. "Right Turn Only" signage should be placed at the westbound exit approaches of the northerly project driveway (Intersection #13) and the southerly project driveway (Intersection #14) at Tustin Avenue, as shown in Appendix L.

For the project driveway on Ponderosa Street, nominal amount of project traffic is anticipated to go north on Ponderosa Street because it is a low-volume residential street and the project will likely attract pedestrian traffic instead of vehicular traffic from adjacent residential neighborhood north of the project site. Therefore, even though the project driveway on Ponderosa Street is proposed to be a full access, the westbound left turn and southbound right turn traffic at the Ponderosa Street driveway will be very low which will not adversely impact the traffic circulation on Ponderosa Street. If City of Santa Ana prefers that the Ponderosa Street driveway be a limited access, the driveway may be limited to a northbound left-in/eastbound right-out only access which will not adversely impact the circulation of the project site.

8.5 Bus Stop Location

There is currently a northbound bus stop located on Tustin Avenue adjacent to the project site. It is recommended that the bus stop be relocated to the far side of the intersection of Tustin Avenue and 17th Street. The applicant is coordinating with Orange County Transportation Authority (OCTA) to incorporate the bus stop location in the project plan. OCTA has provided the design guidelines for the bus stop. Based on the latest site plan, the third through lane is providing a lane width of 29' where the new proposed bus stop is located. This allows plenty of space for a bus to pullover for a stop, while also allowing vehicles to continue without being blocked by the bus.

8.6 Sight Distance Analysis

The sight distance has been assessed for:

- Southbound left turn lane on Tustin Avenue into the north project driveway
- North project driveway from the access road

In accordance with the criteria contained in the *Highway Design Manual*, Section 201.1 and Section 201.7 (December 2016) published by California Department of Transportation (Caltrans), a minimum sight distance of 600 feet should be provided for a design speed of 40 miles per hour to allow drivers time for decisions without making last minute erratic maneuvers. There is enough sight distance provided for the southbound left turn lane on Tustin Avenue into the north project driveway to allow for enough time for the driver to decide and make a safe turn. There are currently no obstructions within the line of sight area, and any objects placed in the area should be no taller than three and a half feet.

The sight distance from the frontage access road (south driveway) to the northerly project driveway is approximately 140 feet with a clear line of sight, and there is no critical horizontal or vertical street curvature for this segment of Tustin Avenue. On-street parking is prohibited between the frontage access road (south driveway) and the northerly project driveway. Any objects that are proposed to be placed within the line of sight area should be no taller than three and a half feet.

Appendix A – Traffic Count Data Sheets

INTERSECTION TURNING MOVEMENT COUNTS

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

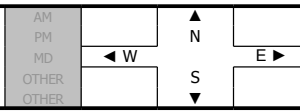
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Sat, Jun 4, 16

LOCATION:
NORTH & SOUTH:
EAST & WEST:

Santa Ana
Tustin
Santa Clara

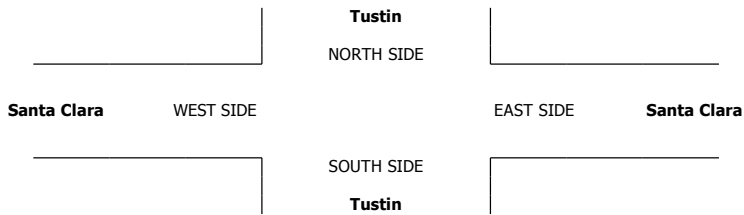
PROJECT #: SC0987
LOCATION #: 1
CONTROL: SIGNAL

NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS					
	Tustin			Tustin			Santa Clara			Santa Clara				TOTAL	NB	SB	EB	WB	TTL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR			X	X	X	X	
LANES:	1	3	0	2	3	0	1	2	0	1	2	0							
MIDDAY	11:00 AM	39	191	20	29	229	21	36	29	27	17	22	32	692	4	1	0	0	5
	11:15 AM	28	183	23	43	192	28	22	26	37	24	23	18	647	1	2	0	0	3
	11:30 AM	23	168	27	36	189	21	26	31	34	14	19	25	613	0	2	0	0	2
	11:45 AM	31	175	24	24	223	23	33	28	41	19	26	34	681	3	3	0	0	6
	12:00 PM	37	188	32	30	236	21	35	22	42	16	22	24	705	1	0	0	0	1
	12:15 PM	32	190	20	24	224	27	39	34	34	20	34	26	704	0	0	0	0	0
	12:30 PM	36	173	21	38	223	23	37	43	34	14	33	29	704	1	2	0	0	3
	12:45 PM	33	192	28	34	215	21	29	29	32	23	25	32	693	1	3	0	0	4
	1:00 PM	31	186	12	30	219	23	38	23	34	18	37	22	673	1	0	0	0	1
	1:15 PM	37	189	12	25	188	22	30	30	31	18	28	25	635	1	2	0	0	3
	1:30 PM	34	197	26	39	208	27	37	28	35	16	23	23	693	0	3	0	0	3
	1:45 PM	36	185	23	34	205	29	32	22	28	17	32	28	671	4	3	0	0	7
	VOLUMES	397	2,217	268	386	2,551	286	394	345	409	216	324	318	8,111	17	21	0	0	38
APPROACH %	14%	77%	9%	12%	79%	9%	34%	30%	36%	25%	38%	37%							
APP/DEPART	2,882	/	2,950	3,223	/	3,193	1,148	/	978	858	/	990	0						
BEGIN PEAK HR VOLUMES	12:00 PM																		
APPROACH %	138	743	101	126	898	92	140	128	142	73	114	111	2,806						
APPROACH %	14%	76%	10%	11%	80%	8%	34%	31%	35%	24%	38%	37%							
PEAK HR FACTOR	0.955												0.995						
APP/DEPART	982	/	999	1,116	/	1,116	410	/	350	298	/	341	0						
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%							
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0						
BEGIN PEAK HR VOLUMES	3:00 PM																		
APPROACH %	0	0	0	0	0	0	0	0	0	0	0	0	0						
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%							
PEAK HR FACTOR	0.000												0.000						
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0						



	ALL PED AND BIKE				
	E SIDE	W SIDE	S SIDE	N SIDE	
AM	11:00 AM	0	0	0	0
	11:15 AM	0	0	0	0
	11:30 AM	0	0	0	0
	11:45 AM	0	0	0	0
	12:00 PM	0	0	0	0
	12:15 PM	0	0	0	0
	12:30 PM	0	0	0	0
	12:45 PM	0	0	0	0
	1:00 PM	0	0	0	0
	1:15 PM	0	0	0	0
PM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
TOTAL	0	0	0	0	

	ALL PED AND BIKE				
	E SIDE	W SIDE	S SIDE	N SIDE	
AM	11:00 AM	0	0	0	0
	11:15 AM	0	0	0	0
	11:30 AM	0	0	0	0
	11:45 AM	0	0	0	0
	12:00 PM	0	0	0	0
	12:15 PM	0	0	0	0
	12:30 PM	0	0	0	0
	12:45 PM	0	0	0	0
	1:00 PM	0	0	0	0
	1:15 PM	0	0	0	0
PM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
TOTAL	0	0	0	0	

	PEDESTRIAN CROSSINGS			
	E SIDE	W SIDE	S SIDE	N SIDE
AM	11:00 AM	0	0	0
	11:15 AM	0	0	0
	11:30 AM	0	0	0
	11:45 AM	0	0	0
	12:00 PM	0	0	0
	12:15 PM	0	0	0
	12:30 PM	0	0	0
	12:45 PM	0	0	0
	1:00 PM	0	0	0
	1:15 PM	0	0	0
PM	3:00 PM	0	0	0
	3:15 PM	0	0	0
	3:30 PM	0	0	0
	3:45 PM	0	0	0
	4:00 PM	0	0	0
	4:15 PM	0	0	0
	4:30 PM	0	0	0
	4:45 PM	0	0	0
	5:00 PM	0	0	0
	5:15 PM	0	0	0
TOTAL	0	0	0	

	BICYCLE CROSSINGS			
	ES	WS	SS	NS
AM	11:00 AM	0	0	0
	11:15 AM	0	0	0
	11:30 AM	0	0	0
	11:45 AM	0	0	0
	12:00 PM	0	0	0
	12:15 PM	0	0	0
	12:30 PM	0	0	0
	12:45 PM	0	0	0
	1:00 PM	0	0	0
	1:15 PM	0	0	0
PM	3:00 PM	0	0	0
	3:15 PM	0	0	0
	3:30 PM	0	0	0
	3:45 PM	0	0	0
	4:00 PM	0	0	0
	4:15 PM	0	0	0
	4:30 PM	0	0	0
	4:45 PM	0	0	0
	5:00 PM	0	0	0
	5:15 PM	0	0	0
TOTAL	0	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Tue, Jun 7, 16	LOCATION: NORTH & SOUTH: EAST & WEST:	Santa Ana Tustin Santa Clara	PROJECT #: SC0987 LOCATION #: 1 CONTROL: SIGNAL
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NOTES:	AM PM MD OTHER OTHER	◀ W E ▶	▲ N S ▼	
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Add U-Turns to Left Turns

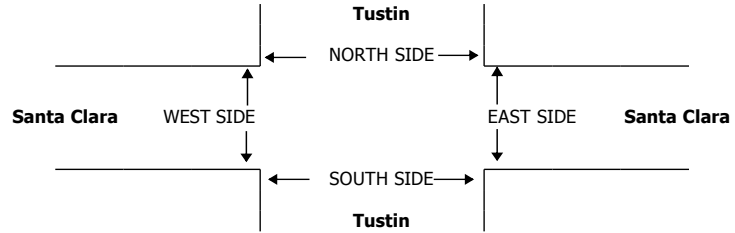
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	

U-TURNS				
NB	SB	EB	WB	TTL

PM	3:00 PM	39	230	20	36	219	25	33	28	32	27	39	28	756
	3:15 PM	40	255	26	46	216	21	30	39	30	24	38	38	803
	3:30 PM	45	255	25	32	210	31	24	26	30	19	34	22	753
	3:45 PM	38	279	26	28	223	20	34	33	24	13	34	20	772
	4:00 PM	28	307	23	32	206	28	36	45	31	20	38	29	823
	4:15 PM	31	273	19	31	204	22	23	34	31	13	40	28	749
	4:30 PM	35	310	34	32	260	24	36	43	34	13	42	31	894
	4:45 PM	39	365	32	36	226	26	28	36	41	20	62	32	943
	VOLUMES	295	2,274	205	273	1,764	197	244	284	253	149	327	228	6,493
	APPROACH %	11%	82%	7%	12%	79%	9%	31%	36%	32%	21%	46%	32%	
APP/DEPART	2,774	/	2,761	2,234	/	2,174	781	/	747	704	/	811	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	133	1,255	108	131	896	100	123	158	137	66	182	120	3,409	
APPROACH %	9%	84%	7%	12%	80%	9%	29%	38%	33%	18%	49%	33%		
PEAK HR FACTOR	0.858			0.892			0.925			0.807			0.904	
APP/DEPART	1,496	/	1,506	1,127	/	1,101	418	/	389	368	/	413	0	
PM	5:00 PM	43	387	34	41	224	18	28	40	29	18	56	32	950
	5:15 PM	43	412	33	46	235	28	36	51	27	23	49	32	1,015
	5:30 PM	52	390	29	51	205	27	39	44	36	15	54	33	975
	5:45 PM	51	382	33	37	234	21	39	40	36	18	63	44	998
	6:00 PM	49	364	28	35	217	29	37	47	30	24	53	32	945
	6:15 PM	50	380	19	47	227	24	39	54	27	13	37	24	941
	6:30 PM	39	278	30	32	179	31	35	37	19	24	34	30	768
	6:45 PM	38	256	16	35	211	18	22	39	19	14	38	24	730
	VOLUMES	365	2,849	222	324	1,732	196	275	352	223	149	384	251	7,322
	APPROACH %	11%	83%	6%	14%	77%	9%	32%	41%	26%	19%	49%	32%	
APP/DEPART	3,436	/	3,385	2,252	/	2,110	850	/	888	784	/	939	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	189	1,571	129	175	898	94	142	175	128	74	222	141	3,938	
APPROACH %	10%	83%	7%	15%	77%	8%	32%	39%	29%	17%	51%	32%		
PEAK HR FACTOR	0.968			0.944			0.935			0.874			0.970	
APP/DEPART	1,889	/	1,862	1,167	/	1,106	445	/	471	437	/	499	0	

1	0	0	0	1
1	3	0	0	4
2	2	0	0	4
2	2	0	0	4
1	3	0	0	4
1	0	0	0	1
0	1	0	0	1
0	4	0	0	4
8	15	0	0	23

1	4	0	0	5
4	1	0	0	5
0	2	0	0	2
1	1	0	0	2
0	1	0	0	1
0	0	0	0	0
0	1	0	0	1
0	0	0	0	0
6	10	0	0	16



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	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	0	0	0	0
0	0	0	0	0
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0	0	0	0	0
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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
0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:
Sat, Jun 4, 16

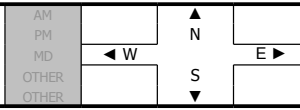
LOCATION:
NORTH & SOUTH:
EAST & WEST:

Santa Ana
Tustin
17th

PROJECT #:
LOCATION #:
CONTROL:

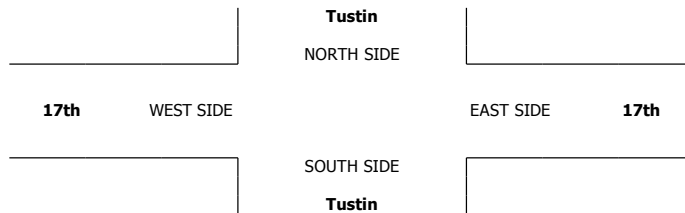
SC0987
2
SIGNAL

NOTES:



Add U-Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL	U-TURNS					
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		NB	SB	EB	WB	TTL	
LANES:	2	2	1	2	3	0	2	3	1	2	3	1	X	X	X	X			
MIDDAY	11:00 AM	34	63	40	110	71	14	75	156	28	60	153	73	877	2	0	19	1	22
	11:15 AM	41	50	38	109	77	14	94	162	28	43	139	99	894	0	0	22	2	24
	11:30 AM	44	60	52	100	63	7	88	176	24	54	155	78	901	2	0	17	3	22
	11:45 AM	36	72	39	115	82	14	101	177	29	61	171	97	994	2	0	22	1	25
	12:00 PM	51	73	45	130	81	11	105	196	33	60	180	88	1,053	2	0	25	0	27
	12:15 PM	40	72	47	112	85	10	108	193	26	55	172	105	1,025	1	0	32	3	36
	12:30 PM	48	57	38	129	85	15	113	207	27	74	163	80	1,036	2	0	27	2	31
	12:45 PM	29	66	47	90	72	6	97	187	29	62	201	93	979	3	0	16	0	19
	1:00 PM	33	64	38	96	74	11	78	205	21	52	187	83	942	2	0	17	1	20
	1:15 PM	34	69	44	88	79	12	81	199	24	58	154	84	926	2	0	16	1	19
	1:30 PM	51	66	30	92	81	12	91	189	23	63	193	95	986	4	0	26	1	31
	1:45 PM	36	71	35	116	89	6	87	163	27	129	202	80	1,041	3	0	11	3	17
	VOLUMES	477	783	493	1,287	939	132	1,118	2,210	319	771	2,070	1,055	11,654	25	0	250	18	293
APPROACH %	27%	45%	28%	55%	40%	6%	31%	61%	9%	20%	53%	27%							
APP/DEPART	1,753	/	2,706	2,358	/	2,036	3,647	/	4,008	3,896	/	2,904	0						
BEGIN PEAK HR	11:45 AM																		
VOLUMES	175	274	169	486	333	50	427	773	115	250	686	370	4,108						
APPROACH %	28%	44%	27%	56%	38%	6%	32%	59%	9%	19%	53%	28%							
PEAK HR FACTOR	0.914			0.949			0.947			0.983			0.975						
APP/DEPART	618	/	965	869	/	699	1,315	/	1,434	1,306	/	1,010	0						
PM	03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0					
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0						
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0						
BEGIN PEAK HR	3:00 PM																		
VOLUMES	0	0	0	0	0	0	0	0	0	0	0	0	0						
APPROACH %	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0						
PEAK HR FACTOR	0.000			0.000			0.000			0.000			0.000						
APP/DEPART	0	/	0	0	/	0	0	/	0	0	/	0	0						



	ALL PED AND BIKE				TOTAL
	E SIDE	W SIDE	S SIDE	N SIDE	
AM	11:00 AM	0	0	0	0
	11:15 AM	0	0	0	0
	11:30 AM	0	0	0	0
	11:45 AM	0	0	0	0
	12:00 PM	0	0	0	0
	12:15 PM	0	0	0	0
	12:30 PM	0	0	0	0
	12:45 PM	0	0	0	0
	1:00 PM	0	0	0	0
	1:15 PM	0	0	0	0
PM	1:30 PM	0	0	0	0
	1:45 PM	0	0	0	0
	TOTAL	0	0	0	0
	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
4:45 PM	0	0	0	0	
5:00 PM	0	0	0	0	
5:15 PM	0	0	0	0	
5:30 PM	0	0	0	0	
5:45 PM	0	0	0	0	
TOTAL	0	0	0	0	

	PEDESTRIAN CROSSINGS				TOTAL
	E SIDE	W SIDE	S SIDE	N SIDE	
AM	11:00 AM	0	0	0	0
	11:15 AM	0	0	0	0
	11:30 AM	0	0	0	0
	11:45 AM	0	0	0	0
	12:00 PM	0	0	0	0
	12:15 PM	0	0	0	0
	12:30 PM	0	0	0	0
	12:45 PM	0	0	0	0
	1:00 PM	0	0	0	0
	1:15 PM	0	0	0	0
PM	1:30 PM	0	0	0	0
	1:45 PM	0	0	0	0
	TOTAL	0	0	0	0
	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
4:45 PM	0	0	0	0	
5:00 PM	0	0	0	0	
5:15 PM	0	0	0	0	
5:30 PM	0	0	0	0	
5:45 PM	0	0	0	0	
TOTAL	0	0	0	0	

	BICYCLE CROSSINGS				TOTAL
	ES	WS	SS	NS	
AM	11:00 AM	0	0	0	0
	11:15 AM	0	0	0	0
	11:30 AM	0	0	0	0
	11:45 AM	0	0	0	0
	12:00 PM	0	0	0	0
	12:15 PM	0	0	0	0
	12:30 PM	0	0	0	0
	12:45 PM	0	0	0	0
	1:00 PM	0	0	0	0
	1:15 PM	0	0	0	0
PM	1:30 PM	0	0	0	0
	1:45 PM	0	0	0	0
	TOTAL	0	0	0	0
	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
4:45 PM	0	0	0	0	
5:00 PM	0	0	0	0	
5:15 PM	0	0	0	0	
5:30 PM	0	0	0	0	
5:45 PM	0	0	0	0	
TOTAL	0	0	0	0	

	ALL PED AND BIKE				TOTAL
	E SIDE	W SIDE	S SIDE	N SIDE	
AM	11:00 AM	0	0	0	0
	11:15 AM	0	0	0	0
	11:30 AM	0	0	0	0
	11:45 AM	0	0	0	0
	12:00 PM	0	0	0	0
	12:15 PM	0	0	0	0
	12:30 PM	0	0	0	0
	12:45 PM	0	0	0	0
	1:00 PM	0	0	0	0
	1:15 PM	0	0	0	0
PM	1:30 PM	0	0	0	0
	1:45 PM	0	0	0	0
	TOTAL	0	0	0	0
	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
4:45 PM	0	0	0	0	
5:00 PM	0	0	0	0	
5:15 PM	0	0	0	0	
5:30 PM	0	0	0	0	
5:45 PM	0	0	0	0	
TOTAL	0	0	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Tue, Jun 7, 16	LOCATION: NORTH & SOUTH: EAST & WEST:	Santa Ana Tustin Tustin Centre	PROJECT #: LOCATION #: CONTROL:	SC0987 3 SIGNAL
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NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ E ▼	
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Add U-Turns to Left Turns

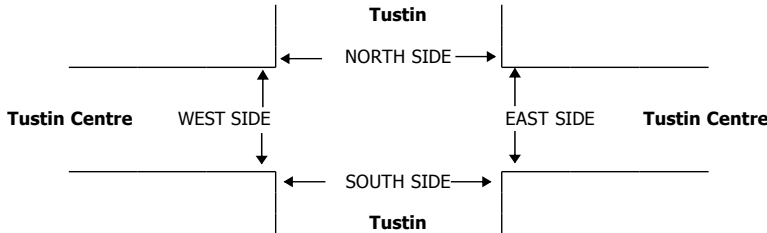
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Tustin			Tustin			Tustin Centre			Tustin Centre			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	3	1	2	3	0	0.5	0.5	1	0.5	0.5	1	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	

PM	3:00 PM	29	267	8	32	162	29	10	1	22	11	3	32	606
	3:15 PM	22	244	8	22	168	36	13	0	24	8	2	17	564
	3:30 PM	27	250	9	22	149	28	18	2	14	3	2	26	550
	3:45 PM	13	261	9	19	151	25	6	1	24	3	1	23	536
	4:00 PM	36	303	11	30	145	30	8	1	23	7	5	44	643
	4:15 PM	27	310	9	32	134	22	20	0	21	6	3	33	617
	4:30 PM	25	385	14	35	141	23	16	0	18	15	5	54	731
	4:45 PM	23	330	11	17	120	31	16	0	17	10	1	54	630
	VOLUMES	202	2,350	79	209	1,170	224	107	5	163	63	22	283	4,877
	APPROACH %	8%	89%	3%	13%	73%	14%	39%	2%	59%	17%	6%	77%	
APP/DEPART	2,631	/	2,797	1,603	/	1,403	275	/	236	368	/	441	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	111	1,328	45	114	540	106	60	1	79	38	14	185	2,621	
APPROACH %	7%	89%	3%	15%	71%	14%	43%	1%	56%	16%	6%	78%		
PEAK HR FACTOR	0.875			0.927			0.854			0.801			0.896	
APP/DEPART	1,484	/	1,606	760	/	661	140	/	127	237	/	227	0	
PM	5:00 PM	28	421	29	11	134	21	19	2	9	16	6	61	757
	5:15 PM	17	373	19	35	136	30	13	1	21	10	2	48	705
	5:30 PM	15	342	13	31	166	24	8	0	25	12	3	40	679
	5:45 PM	26	324	14	33	151	28	12	0	15	13	5	41	662
	6:00 PM	15	304	7	17	135	28	15	2	11	14	2	51	601
	6:15 PM	27	257	10	19	123	29	18	0	13	8	2	27	533
	6:30 PM	14	230	7	26	122	29	5	0	23	10	3	27	496
	6:45 PM	17	206	18	21	143	26	16	4	22	10	0	36	519
	VOLUMES	159	2,457	117	193	1,110	215	106	9	139	93	23	331	4,952
	APPROACH %	6%	90%	4%	13%	73%	14%	42%	4%	55%	21%	5%	74%	
APP/DEPART	2,733	/	2,958	1,518	/	1,347	254	/	255	447	/	392	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	86	1,460	75	110	587	103	52	3	70	51	16	190	2,803	
APPROACH %	5%	90%	5%	14%	73%	13%	42%	2%	56%	20%	6%	74%		
PEAK HR FACTOR	0.848			0.905			0.893			0.774			0.926	
APP/DEPART	1,621	/	1,741	800	/	710	125	/	149	257	/	203	0	

1	8	0	0	9
0	6	0	0	6
1	5	0	0	6
1	5	0	0	6
1	12	0	0	13
1	5	0	0	6
1	11	0	0	12
1	5	0	0	6
7	57	0	0	64

0	3	0	0	3
1	13	0	0	14
0	11	0	0	11
1	12	0	0	13
0	6	0	0	6
1	3	0	0	4
1	7	0	0	8
1	9	0	0	10
5	64	0	0	69



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:
Tue, Jun 7, 16

LOCATION:
NORTH & SOUTH: Santa Ana
 Sherry
EAST & WEST: 17th

PROJECT #: SC0987
LOCATION #: 4
CONTROL: SIGNAL

NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ E ▼	
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Add U-Turns to Left Turns

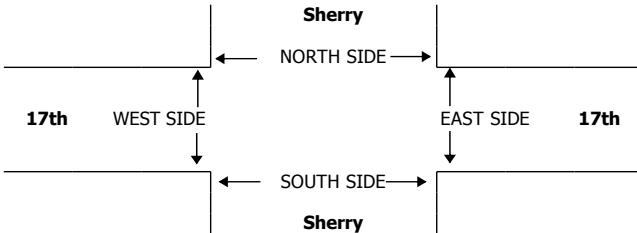
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1	NT 1	NR 1	SL 1	ST 1	SR 0	EL 1	ET 3	ER 0	WL 1	WT 3	WR 0	

U-TURNS				
NB	SB	EB	WB	TTL

3:00 PM	49	16	28	41	17	10	8	209	15	31	252	22	698
3:15 PM	46	16	22	22	13	9	15	218	26	36	263	19	705
3:30 PM	59	31	27	21	15	15	12	242	29	30	251	22	754
3:45 PM	55	26	22	28	12	14	9	216	21	34	278	18	733
4:00 PM	62	15	47	35	13	13	11	222	24	30	270	12	754
4:15 PM	57	19	33	19	17	7	7	248	16	24	277	9	733
4:30 PM	62	23	34	28	19	9	6	199	16	39	267	11	713
4:45 PM	65	26	25	33	12	12	7	246	16	32	295	17	786
VOLUMES	455	172	238	227	118	89	75	1,800	163	256	2,153	130	5,876
APPROACH %	53%	20%	28%	52%	27%	21%	4%	88%	8%	10%	85%	5%	
APP/DEPART	865	/	363	434	/	520	2,038	/	2,293	2,539	/	2,700	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	246	83	139	115	61	41	31	915	72	125	1,109	49	2,986
APPROACH %	53%	18%	30%	53%	28%	19%	3%	90%	7%	10%	86%	4%	
PEAK HR FACTOR	0.944												
APP/DEPART	468	/	160	217	/	249	1,018	/	1,184	1,283	/	1,393	0
5:00 PM	72	28	48	37	16	17	10	246	23	28	292	12	829
5:15 PM	74	38	40	21	13	8	9	260	34	33	319	15	864
5:30 PM	74	33	34	35	19	11	16	208	24	34	289	19	796
5:45 PM	67	21	30	25	10	9	9	224	33	33	272	11	744
6:00 PM	59	21	41	26	17	11	11	240	25	39	278	16	784
6:15 PM	52	18	35	25	9	9	12	186	16	31	231	15	639
6:30 PM	45	10	32	27	2	14	16	190	21	22	194	13	586
6:45 PM	48	14	24	20	9	7	10	196	21	31	213	9	602
VOLUMES	491	183	284	216	95	86	93	1,750	197	251	2,088	110	5,844
APPROACH %	51%	19%	30%	54%	24%	22%	5%	86%	10%	10%	85%	4%	
APP/DEPART	958	/	364	397	/	511	2,040	/	2,287	2,449	/	2,682	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	287	120	152	118	58	45	44	938	114	128	1,172	57	3,233
APPROACH %	51%	21%	27%	53%	26%	20%	4%	86%	10%	9%	86%	4%	
PEAK HR FACTOR	0.919												
APP/DEPART	559	/	214	221	/	278	1,096	/	1,231	1,357	/	1,510	0

1	0	1	4	6
0	0	5	6	11
1	0	3	2	6
3	0	2	1	6
3	0	3	2	8
0	0	0	3	3
2	0	0	6	8
1	0	0	4	5
11	0	14	28	53

0	0	1	5	6
0	0	1	6	7
0	0	4	8	12
1	0	1	4	6
1	0	2	5	8
1	0	4	4	9
1	0	4	3	8
1	0	5	2	8
5	0	22	37	64



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:
Tue, Jun 7, 16

LOCATION:
NORTH & SOUTH: Santa Ana
EAST & WEST: Ponderosa 17th

PROJECT #: SC0987
LOCATION #: 5
CONTROL: STOP N/S

NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ E ▼	
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Add U-Turns to Left Turns

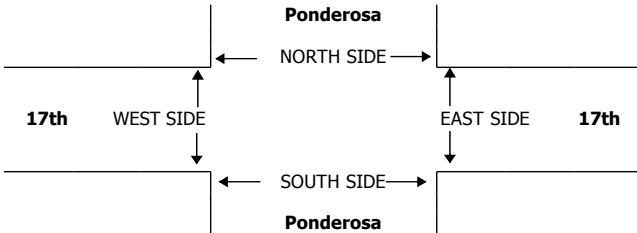
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL X	NT X	NR 0	SL X	ST X	SR 0	EL X	ET 4	ER 0	WL X	WT 5	WR 0	

U-TURNS				
NB	SB	EB	WB	TTL

3:00 PM	0	0	3	0	0	9	0	351	3	0	375	14	755
3:15 PM	0	0	2	0	0	8	0	362	3	0	357	21	753
3:30 PM	0	0	1	0	0	8	0	355	2	0	330	16	712
3:45 PM	0	0	1	0	0	8	0	337	3	0	349	14	712
4:00 PM	0	0	9	0	0	8	0	379	1	0	315	24	736
4:15 PM	0	0	1	0	0	8	0	408	0	0	341	18	776
4:30 PM	0	0	4	0	0	8	0	445	3	0	326	20	806
4:45 PM	0	0	3	0	0	11	0	404	3	0	367	20	808
VOLUMES	0	0	24	0	0	68	0	3,041	18	0	2,760	147	6,058
APPROACH %	0%	0%	100%	0%	0%	100%	0%	99%	1%	0%	95%	5%	
APP/DEPART	24	/	147	68	/	18	3,059	/	3,065	2,907	/	2,828	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	0	0	17	0	0	35	0	1,636	7	0	1,349	82	3,126
APPROACH %	0%	0%	100%	0%	0%	100%	0%	100%	0%	0%	94%	6%	
PEAK HR FACTOR	0.472			0.795			0.917			0.924			0.967
APP/DEPART	17	/	82	35	/	7	1,643	/	1,653	1,431	/	1,384	0
5:00 PM	0	0	0	0	0	7	0	687	2	0	519	24	1,239
5:15 PM	0	0	4	0	0	10	0	411	5	0	345	12	787
5:30 PM	0	0	1	0	0	12	0	365	1	0	351	14	744
5:45 PM	0	0	2	0	0	10	0	337	4	0	327	13	693
6:00 PM	0	0	2	0	0	9	0	361	3	0	310	11	696
6:15 PM	0	0	1	0	0	11	0	303	1	0	322	10	648
6:30 PM	0	0	0	0	0	8	0	303	2	0	277	9	599
6:45 PM	0	0	2	0	0	7	0	267	6	0	255	16	553
VOLUMES	0	0	12	0	0	74	0	3,034	24	0	2,706	109	5,959
APPROACH %	0%	0%	100%	0%	0%	100%	0%	99%	1%	0%	96%	4%	
APP/DEPART	12	/	109	74	/	24	3,058	/	3,046	2,815	/	2,780	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	0	0	7	0	0	39	0	1,800	12	0	1,542	63	3,463
APPROACH %	0%	0%	100%	0%	0%	100%	0%	99%	1%	0%	96%	4%	
PEAK HR FACTOR	0.438			0.813			0.657			0.739			0.699
APP/DEPART	7	/	63	39	/	12	1,812	/	1,807	1,605	/	1,581	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	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	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	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	0



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:
Tue, Jun 7, 16

LOCATION:
NORTH & SOUTH: Santa Ana
EAST & WEST: SR-55 SB Ramps
17th

PROJECT #: SC0987
LOCATION #: 6
CONTROL: SIGNAL

NOTES:	AM		▲	
	PM		N	
	MD	◀ W	S	E ▶
	OTHER		▼	

Add U-Turns to Left Turns

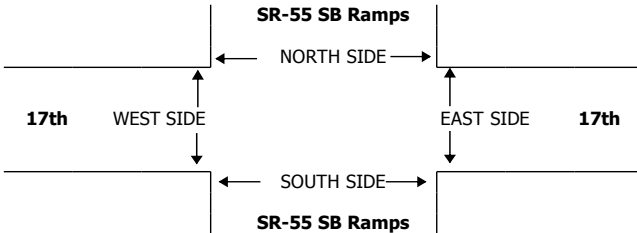
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	

U-TURNS				
NB	SB	EB	WB	TTL

3:00 PM	0	0	115	2	4	1	5	295	98	104	381	9	1,014	
3:15 PM	0	0	133	1	4	5	15	256	95	149	362	10	1,030	
3:30 PM	0	0	137	5	8	1	10	238	89	95	334	9	926	
3:45 PM	0	0	161	1	9	2	10	226	107	103	363	3	985	
4:00 PM	0	0	131	1	4	2	10	289	98	99	350	13	997	
4:15 PM	0	0	143	3	8	0	12	284	105	110	374	13	1,052	
4:30 PM	0	0	135	5	8	4	12	323	121	104	361	12	1,085	
4:45 PM	0	0	152	6	5	3	12	269	120	101	344	13	1,025	
VOLUMES	0	0	1,107	24	50	18	86	2,180	833	865	2,869	82	8,114	
APPROACH %	0%	0%	100%	26%	54%	20%	3%	70%	27%	23%	75%	2%		
APP/DEPART	1,107	/	106	92	/	1,748	3,099	/	3,311	3,816	/	2,949	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	0	0	561	15	25	9	46	1,165	444	414	1,429	51	4,159	
APPROACH %	0%	0%	100%	31%	51%	18%	3%	70%	27%	22%	75%	3%		
PEAK HR FACTOR	0.923			0.721			0.907			0.953			0.958	
APP/DEPART	561	/	64	49	/	883	1,655	/	1,741	1,894	/	1,471	0	
5:00 PM	0	0	178	1	8	3	6	346	127	111	381	20	1,181	
5:15 PM	0	0	195	5	13	1	13	313	142	96	392	15	1,185	
5:30 PM	0	0	195	1	11	3	13	267	124	95	400	11	1,120	
5:45 PM	0	0	199	6	7	4	11	238	121	98	346	17	1,047	
6:00 PM	0	0	133	3	5	2	13	259	125	100	331	15	986	
6:15 PM	0	0	111	0	7	2	5	213	109	97	343	11	898	
6:30 PM	0	0	98	1	5	2	6	222	88	102	276	11	811	
6:45 PM	0	0	109	2	6	6	4	185	110	85	293	14	814	
VOLUMES	0	0	1,218	19	62	23	71	2,043	946	784	2,762	114	8,042	
APPROACH %	0%	0%	100%	18%	60%	22%	2%	67%	31%	21%	75%	3%		
APP/DEPART	1,218	/	139	104	/	1,792	3,060	/	3,280	3,660	/	2,831	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	0	0	767	13	39	11	43	1,164	514	400	1,519	63	4,533	
APPROACH %	0%	0%	100%	21%	62%	17%	2%	68%	30%	20%	77%	3%		
PEAK HR FACTOR	0.964			0.829			0.898			0.968			0.956	
APP/DEPART	767	/	78	63	/	953	1,721	/	1,944	1,982	/	1,558	0	

0	0	4	0	4
0	0	13	0	13
0	0	4	0	4
0	0	8	0	8
0	0	8	0	8
0	0	6	0	6
0	0	10	0	10
0	0	9	0	9
0	0	62	0	62

0	0	4	0	4
0	0	8	0	8
0	0	9	0	9
0	0	7	0	7
0	0	8	0	8
0	0	4	0	4
0	0	4	0	4
0	0	2	0	2
0	0	46	0	46



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM					
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM					
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM					
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM					
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM					
3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
PM					
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:
Tue, Jun 7, 16

LOCATION:
NORTH & SOUTH: Santa Ana
EAST & WEST: SR-55 NB Ramps
17th

PROJECT #: SC0987
LOCATION #: 7
CONTROL: SIGNAL

NOTES:	AM PM MD OTHER OTHER	▲ N ◀ W S ▶ E ▼	
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Add U-Turns to Left Turns

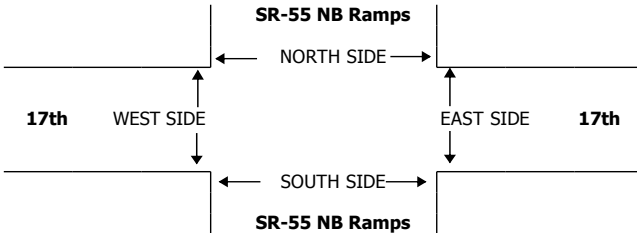
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL 1.3	NT 0.3	NR 1.3	SL 0	ST X	SR 0	EL 1	ET 3	ER 2	WL X	WT 4	WR 0	

U-TURNS				
NB	SB	EB	WB	TTL

3:00 PM	93	6	81	1	0	26	14	261	104	0	406	10	1,002
3:15 PM	80	6	58	0	0	33	10	277	140	0	441	12	1,057
3:30 PM	101	2	52	1	0	18	12	252	123	0	354	5	920
3:45 PM	103	4	51	0	0	17	18	285	117	0	415	10	1,020
4:00 PM	78	10	66	0	0	35	24	251	115	0	467	9	1,055
4:15 PM	82	3	46	1	0	32	9	293	139	0	466	8	1,079
4:30 PM	90	7	48	0	0	23	7	296	123	0	480	12	1,086
4:45 PM	78	4	52	0	0	31	15	292	133	0	436	2	1,043
VOLUMES	705	42	454	3	0	215	109	2,207	994	0	3,465	68	8,262
APPROACH %	59%	3%	38%	1%	0%	99%	3%	67%	30%	0%	98%	2%	
APP/DEPART	1,201	/	210	218	/	994	3,310	/	2,664	3,533	/	4,394	0
BEGIN PEAK HR	4:00 PM												
VOLUMES	328	24	212	1	0	121	55	1,132	510	0	1,849	31	4,263
APPROACH %	58%	4%	38%	1%	0%	99%	3%	67%	30%	0%	98%	2%	
PEAK HR FACTOR	0.916			0.871			0.962			0.955			0.981
APP/DEPART	564	/	105	122	/	510	1,697	/	1,345	1,880	/	2,303	0
5:00 PM	108	3	50	0	0	26	16	347	150	0	477	10	1,187
5:15 PM	85	9	42	0	0	26	22	376	129	0	519	11	1,219
5:30 PM	106	7	57	1	0	28	16	342	103	0	470	7	1,137
5:45 PM	105	5	50	1	0	18	10	322	104	0	440	7	1,062
6:00 PM	90	4	49	1	0	18	12	277	91	0	449	11	1,002
6:15 PM	95	5	76	1	0	16	15	223	69	0	462	7	969
6:30 PM	84	6	69	0	0	15	12	232	96	0	375	7	896
6:45 PM	96	9	78	0	0	22	17	192	102	0	324	12	852
VOLUMES	769	48	471	4	0	169	120	2,311	844	0	3,516	72	8,324
APPROACH %	60%	4%	37%	2%	0%	98%	4%	71%	26%	0%	98%	2%	
APP/DEPART	1,288	/	238	173	/	844	3,275	/	2,786	3,588	/	4,456	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	404	24	199	2	0	98	64	1,387	486	0	1,906	35	4,605
APPROACH %	64%	4%	32%	2%	0%	98%	3%	72%	25%	0%	98%	2%	
PEAK HR FACTOR	0.922			0.862			0.919			0.916			0.944
APP/DEPART	627	/	121	100	/	486	1,937	/	1,588	1,941	/	2,410	0

0	0	1	0	1
0	0	1	0	1
0	0	2	0	2
0	0	0	0	0
0	0	2	0	2
0	0	2	0	2
0	0	0	0	0
0	0	1	0	1
0	0	9	0	9

0	0	0	0	0
0	0	0	0	0
0	0	2	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	2	0	2



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

3:00 PM	0	0	0	0	0
3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0
4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0
6:15 PM	0	0	0	0	0
6:30 PM	0	0	0	0	0
6:45 PM	0	0	0	0	0
TOTAL	0	0	0	0	0

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:
Tue, Jun 7, 16

LOCATION:
NORTH & SOUTH: Santa Ana
EAST & WEST: Enderle Center
17th

PROJECT #: SC0987
LOCATION #: 9
CONTROL: SIGNAL

NOTES:

AM	▲ N	E ▶
PM		
MD	▼ S	▶ E
OTHER		
OTHER	◀ W	

Add U-Turns to Left Turns

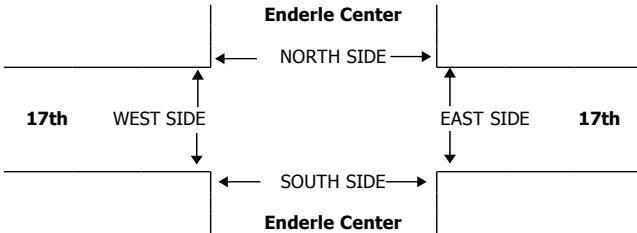
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	Enderle Center			Enderle Center			17th			17th			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	1	1	1	1	1	1	1	3	0	1	3	0	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

PM	3:00 PM	17	21	7	18	17	25	54	257	11	12	312	31	782
	3:15 PM	20	8	5	21	9	46	38	278	14	6	330	26	801
	3:30 PM	13	16	1	19	20	44	35	222	6	6	249	20	651
	3:45 PM	16	19	6	27	17	35	37	251	12	11	307	33	771
	4:00 PM	14	20	6	20	14	41	43	245	8	13	337	32	793
	4:15 PM	14	14	7	15	8	33	44	240	13	15	374	38	815
	4:30 PM	20	24	7	13	15	38	46	274	13	9	373	44	876
	4:45 PM	13	22	5	18	20	34	34	280	18	7	334	42	827
	VOLUMES	127	144	44	151	120	296	331	2,047	95	79	2,616	266	6,316
	APPROACH %	40%	46%	14%	27%	21%	52%	13%	83%	4%	3%	88%	9%	
APP/DEPART	315	/	676	567	/	282	2,473	/	2,254	2,961	/	3,104	0	
BEGIN PEAK HR	4:00 PM													
VOLUMES	61	80	25	66	57	146	167	1,039	52	44	1,418	156	3,311	
APPROACH %	37%	48%	15%	25%	21%	54%	13%	83%	4%	3%	88%	10%		
PEAK HR FACTOR	0.814			0.897			0.944			0.947			0.945	
APP/DEPART	166	/	373	269	/	148	1,258	/	1,135	1,618	/	1,655	0	
PM	5:00 PM	23	33	6	14	17	32	50	315	6	19	331	38	884
	5:15 PM	22	50	11	19	13	35	46	278	19	11	371	44	919
	5:30 PM	19	44	8	25	22	36	49	311	9	11	341	58	933
	5:45 PM	16	36	5	23	20	37	47	286	12	15	337	65	899
	6:00 PM	18	26	10	18	10	31	44	271	9	10	354	52	853
	6:15 PM	10	22	6	20	16	40	58	225	10	8	320	39	774
	6:30 PM	18	24	5	20	10	38	43	217	6	3	258	37	679
	6:45 PM	16	17	10	11	17	30	40	210	8	8	244	31	642
	VOLUMES	142	252	61	150	125	279	377	2,113	79	85	2,556	364	6,583
	APPROACH %	31%	55%	13%	27%	23%	50%	15%	82%	3%	3%	85%	12%	
APP/DEPART	455	/	925	554	/	284	2,569	/	2,328	3,005	/	3,046	0	
BEGIN PEAK HR	5:00 PM													
VOLUMES	80	163	30	81	72	140	192	1,190	46	56	1,380	205	3,635	
APPROACH %	29%	60%	11%	28%	25%	48%	13%	83%	3%	3%	84%	12%		
PEAK HR FACTOR	0.822			0.883			0.962			0.963			0.974	
APP/DEPART	273	/	526	293	/	172	1,428	/	1,303	1,641	/	1,634	0	

0	0	11	1	12
0	0	6	3	9
0	0	9	2	11
0	0	9	1	10
0	0	6	1	7
0	0	10	2	12
0	0	7	1	8
0	0	7	1	8
0	0	65	12	77

0	0	10	0	10
0	0	8	2	10
0	0	7	0	7
0	0	9	0	9
0	0	5	2	7
0	0	14	0	14
0	1	9	1	11
0	0	7	0	7
0	1	69	5	75



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

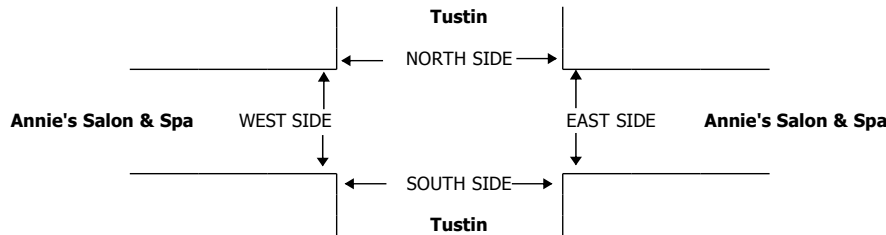
PREPARED BY: AimTD LLC. tel: 714 253 7888 cs@aimtd.com

DATE: Tue, Jun 7, 16	LOCATION: NORTH & SOUTH: Santa Ana EAST & WEST: Tustin Annie's Salon & Spa	PROJECT #: SC0987 LOCATION #: 11 CONTROL: STOP E	NOTES:
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LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
	0	2	X	X	2	0	0	X	0	X	X	X	

U-TURNS				
NB	SB	EB	WB	TTL
0	0	0	0	0

PM	3:00 PM	0	274	0	0	202	0	0	1	0	0	0	477	U-TURNS	
	3:15 PM	1	270	0	0	214	1	2	0	0	0	0	488		
	3:30 PM	1	321	0	0	175	1	1	0	4	0	0	503		
	3:45 PM	5	331	0	1	184	1	0	0	2	0	0	524		
	4:00 PM	2	352	0	0	175	0	1	0	2	0	0	532		
	4:15 PM	1	362	0	0	171	1	1	0	0	0	0	536		
	4:30 PM	1	420	0	0	216	0	0	0	3	0	0	640		
	4:45 PM	0	415	0	0	200	2	1	0	4	0	0	622		
	VOLUMES	11	2,745	0	1	1,537	6	6	0	16	0	0	0		4,322
	APPROACH %	0%	100%	0%	0%	100%	0%	27%	0%	73%	0%	0%	0%		
APP/DEPART	2,756	/	2,752	1,544	/	1,555	22	/	0	0	/	15	0		
BEGIN PEAK HR	4:00 PM														
VOLUMES	4	1,549	0	0	762	3	3	0	9	0	0	0	2,330		
APPROACH %	0%	100%	0%	0%	100%	0%	25%	0%	75%	0%	0%	0%			
PEAK HR FACTOR	0.922														
APP/DEPART	1,553	/	1,552	765	/	771	12	/	0	0	/	7	0		
PM	5:00 PM	1	645	0	0	317	0	0	2	0	0	0	965	U-TURNS	
	5:15 PM	1	443	0	0	182	0	3	0	0	0	0	629		
	5:30 PM	1	437	0	0	204	1	0	0	1	0	0	644		
	5:45 PM	2	425	0	0	194	1	1	0	2	0	0	625		
	6:00 PM	2	471	0	0	188	0	1	0	3	0	0	665		
	6:15 PM	1	370	1	0	174	1	0	0	3	0	0	550		
	6:30 PM	0	296	0	0	147	0	3	0	1	0	0	447		
	6:45 PM	4	233	0	0	188	1	1	0	4	0	0	431		
	VOLUMES	12	3,320	1	0	1,594	4	9	0	16	0	0	0		4,956
	APPROACH %	0%	100%	0%	0%	100%	0%	36%	0%	64%	0%	0%	0%		
APP/DEPART	3,333	/	3,329	1,598	/	1,614	25	/	1	0	/	12	0		
BEGIN PEAK HR	5:00 PM														
VOLUMES	5	1,950	0	0	897	2	4	0	5	0	0	0	2,863		
APPROACH %	0%	100%	0%	0%	100%	0%	44%	0%	56%	0%	0%	0%			
PEAK HR FACTOR	0.757														
APP/DEPART	1,955	/	1,954	899	/	904	9	/	0	0	/	5	0		



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

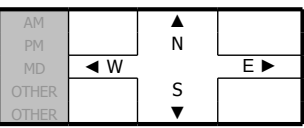
	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL
AM	3:00 PM	0	0	0	0
	3:15 PM	0	0	0	0
	3:30 PM	0	0	0	0
	3:45 PM	0	0	0	0
	4:00 PM	0	0	0	0
	4:15 PM	0	0	0	0
	4:30 PM	0	0	0	0
	4:45 PM	0	0	0	0
TOTAL	0	0	0	0	0
PM	5:00 PM	0	0	0	0
	5:15 PM	0	0	0	0
	5:30 PM	0	0	0	0
	5:45 PM	0	0	0	0
	6:00 PM	0	0	0	0
	6:15 PM	0	0	0	0
	6:30 PM	0	0	0	0
	6:45 PM	0	0	0	0
TOTAL	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Tue, Jun 7, 16	LOCATION: NORTH & SOUTH: Santa Ana EAST & WEST: Tustin 7-Eleven	PROJECT #: SC0987 LOCATION #: 12 CONTROL: STOP E	NOTES:
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Add U-Turns to Left Turns



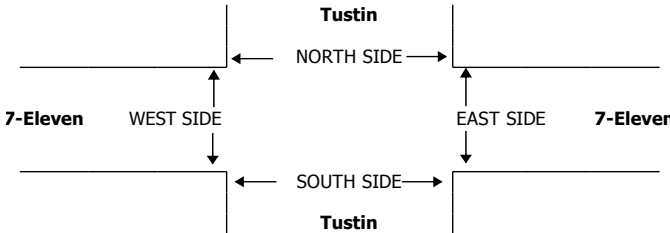
LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	

U-TURNS				
NB	SB	EB	WB	TTL

PM	3:00 PM	1	273	0	0	199	3	1	0	7	0	0	0	484	0	0	0	0	0
	3:15 PM	2	268	0	0	208	4	1	0	10	0	0	0	493	0	0	0	0	0
	3:30 PM	2	318	0	0	171	8	2	0	7	0	0	0	508	0	0	0	0	0
	3:45 PM	2	332	0	0	184	4	2	0	7	0	0	0	531	0	0	0	0	0
	4:00 PM	0	349	0	0	170	4	4	0	5	0	0	0	532	0	0	0	0	0
	4:15 PM	3	361	0	0	168	3	2	0	8	0	0	0	545	1	0	0	0	1
	4:30 PM	0	418	0	0	209	7	1	0	12	0	0	0	647	0	0	0	0	0
	4:45 PM	3	410	0	0	196	6	4	0	10	0	0	0	629	2	0	0	0	2
	VOLUMES	13	2,729	0	0	1,505	39	17	0	66	0	0	0	4,369	3	0	0	0	3
	APPROACH %	0%	100%	0%	0%	97%	3%	20%	0%	80%	0%	0%	0%						
APP/DEPART	2,742	/	2,746	1,544	/	1,574	83	/	0	0	/	49	0						
BEGIN PEAK HR	4:00 PM																		
VOLUMES	6	1,538	0	0	743	20	11	0	35	0	0	0	2,353						
APPROACH %	0%	100%	0%	0%	97%	3%	24%	0%	76%	0%	0%	0%							
PEAK HR FACTOR	0.923																		
APP/DEPART	1,544	/	1,549	763	/	781	46	/	0	0	/	23	0						
PM	5:00 PM	1	642	0	0	307	13	4	0	14	0	0	0	981	0	0	0	0	0
	5:15 PM	2	437	0	0	176	7	6	0	11	0	0	0	639	0	0	0	0	0
	5:30 PM	2	431	0	0	197	8	6	0	14	0	0	0	658	0	0	0	0	0
	5:45 PM	3	425	0	0	190	7	2	0	9	0	0	0	636	0	0	0	0	0
	6:00 PM	2	468	0	0	187	4	5	0	17	0	0	0	683	1	0	0	0	1
	6:15 PM	3	369	0	0	168	11	1	0	7	0	0	0	559	0	0	0	0	0
	6:30 PM	3	291	0	0	142	5	3	0	12	0	0	0	456	0	0	0	0	0
	6:45 PM	4	234	0	1	187	4	2	0	10	0	0	0	442	0	1	0	0	1
	VOLUMES	20	3,297	0	1	1,554	59	29	0	94	0	0	0	5,054	1	1	0	0	2
	APPROACH %	1%	99%	0%	0%	96%	4%	24%	0%	76%	0%	0%	0%						
APP/DEPART	3,317	/	3,327	1,614	/	1,649	123	/	0	0	/	78	0						
BEGIN PEAK HR	5:00 PM																		
VOLUMES	8	1,935	0	0	870	35	18	0	48	0	0	0	2,914						
APPROACH %	0%	100%	0%	0%	96%	4%	27%	0%	73%	0%	0%	0%							
PEAK HR FACTOR	0.755																		
APP/DEPART	1,943	/	1,953	905	/	918	66	/	0	0	/	43	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
0	0	0	0	0
2	0	0	0	2
3	0	0	0	3

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
0	0	0	0	0
0	0	0	0	0
0	1	0	0	1
1	1	0	0	2



	PEDESTRIAN + BIKE CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

AM	3:00 PM	0	0	0	0	0
	3:15 PM	0	0	0	0	0
	3:30 PM	0	0	0	0	0
	3:45 PM	0	0	0	0	0
	4:00 PM	0	0	0	0	0
	4:15 PM	0	0	0	0	0
	4:30 PM	0	0	0	0	0
	4:45 PM	0	0	0	0	0
	TOTAL	0	0	0	0	0
	PM	5:00 PM	0	0	0	0
5:15 PM		0	0	0	0	0
5:30 PM		0	0	0	0	0
5:45 PM		0	0	0	0	0
6:00 PM		0	0	0	0	0
6:15 PM		0	0	0	0	0
6:30 PM		0	0	0	0	0
6:45 PM		0	0	0	0	0
TOTAL		0	0	0	0	0

	PEDESTRIAN CROSSINGS				
	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL

	BICYCLE CROSSINGS				
	NS	SS	ES	WS	TOTAL

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Thu, Oct 12, 17
 LOCATION: Santa Ana
 NORTH & SOUTH: Tustin
 EAST & WEST: Catalina
 PROJECT #: SC1494
 LOCATION #: 1
 CONTROL: STOP E/W

NOTES:

AM
PM
MD
OTHER
OTHER

←

W

▲

N

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S

▶

E

Add U-Turns to Left Turns

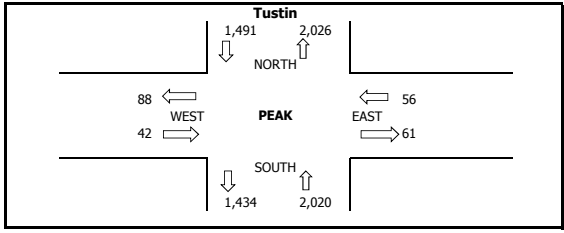
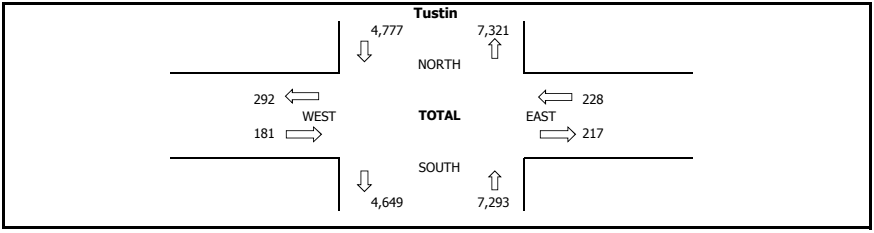
Add Bike Left Turns to Left Turns

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
LANES:	1	2	0	1	3	0	0	1	0	0	1	0	
3:00 PM	15	309	6	12	239	9	3	0	9	2	0	21	625
3:15 PM	14	374	3	11	207	5	3	1	9	6	2	14	649
3:30 PM	6	406	11	7	236	13	0	0	6	4	0	9	698
3:45 PM	10	388	3	6	222	10	3	0	7	3	0	8	660
4:00 PM	7	460	4	6	223	6	9	0	7	2	0	9	733
4:15 PM	2	474	2	6	248	7	2	0	9	3	0	12	765
4:30 PM	9	513	3	11	272	6	5	0	8	0	0	10	837
4:45 PM	12	460	6	9	277	11	4	0	3	0	0	13	795
5:00 PM	8	490	8	10	314	13	4	0	7	1	0	17	872
5:15 PM	13	479	4	12	380	9	4	0	3	1	0	12	917
5:30 PM	10	501	4	11	373	16	11	0	3	1	1	6	937
5:45 PM	12	485	6	7	336	10	1	0	9	1	1	15	883
6:00 PM	5	469	5	3	344	7	1	0	9	2	0	10	855
6:15 PM	7	456	3	8	287	12	3	0	11	1	0	12	800
6:30 PM	7	418	7	13	264	9	4	0	11	3	0	12	748
6:45 PM	10	386	3	6	265	9	4	0	8	2	0	12	705
VOLUMES	147	7,068	78	138	4,487	152	61	1	119	32	4	192	12,479
APPROACH %	2%	97%	1%	3%	94%	3%	34%	1%	66%	14%	2%	84%	
APP/DEPART	7,293	/	7,321	4,777	/	4,649	181	/	217	228	/	292	0
BEGIN PEAK HR	5:00 PM												
VOLUMES	43	1,955	22	40	1,403	48	20	0	22	4	2	50	3,609
APPROACH %	2%	97%	1%	3%	94%	3%	48%	0%	52%	7%	4%	89%	
PEAK HR FACTOR	0.981			0.930			0.750			0.778			0.963
APP/DEPART	2,020	/	2,026	1,491	/	1,434	42	/	61	56	/	88	0

VEHICLE U-TURNS				
NB	SB	EB	WB	TTL
1	0	0	0	1
1	0	0	0	1
0	0	0	0	0
2	0	0	0	2
0	0	0	0	0
0	0	0	0	0
2	0	0	0	2
1	0	0	0	1
1	0	0	0	1
0	1	0	0	1
1	0	0	0	1
3	0	0	0	3
0	0	0	0	0
0	0	0	0	0
0	0	1	0	1
0	0	0	1	1
12	1	1	1	15

BIKE LEFT TURNS				
NL	SL	EL	WL	TTL
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
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
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

INTERSECTION TURNING MOVEMENT COUNTS



ADT1 Tustin north of 17th.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	33	19			12:00	223	181		
00:15	21	12			12:15	240	173		
00:30	22	15			12:30	200	234		
00:45	22	98	22	68	12:45	230	893	233	821
01:00	10	7			13:00	238	239		
01:15	18	9			13:15	237	197		
01:30	7	13			13:30	224	180		
01:45	8	43	8	37	13:45	254	953	192	808
02:00	10	12			14:00	256	184		
02:15	7	8			14:15	271	179		
02:30	14	6			14:30	261	163		
02:45	11	42	8	34	14:45	247	1035	189	715
03:00	11	10			15:00	251	160		
03:15	8	16			15:15	303	156		
03:30	8	9			15:30	298	173		
03:45	13	40	21	56	15:45	325	1177	181	670
04:00	10	20			16:00	348	171		
04:15	8	29			16:15	323	156		
04:30	22	41			16:30	440	175		
04:45	21	61	53	143	16:45	413	1524	197	699
05:00	24	43			17:00	455	201		
05:15	33	53			17:15	460	219		
05:30	29	82			17:30	403	205		
05:45	31	117	107	285	17:45	410	1728	207	832
06:00	32	170			18:00	402	201		
06:15	51	290			18:15	355	178		
06:30	49	430			18:30	319	166		
06:45	67	199	505	1395	18:45	278	1354	177	722
07:00	82	527			19:00	226	120		
07:15	110	545			19:15	197	114		
07:30	99	583			19:30	182	131		
07:45	138	429	566	2221	19:45	173	778	107	472
08:00	139	561			20:00	147	103		
08:15	152	544			20:15	187	93		
08:30	145	480			20:30	152	88		
08:45	132	568	419	2004	20:45	172	658	71	355
09:00	133	285			21:00	162	82		
09:15	152	218			21:15	140	64		
09:30	130	217			21:30	141	57		
09:45	177	592	185	905	21:45	108	551	45	248
10:00	145	152			22:00	84	59		
10:15	164	162			22:15	79	33		
10:30	186	173			22:30	70	47		
10:45	193	688	149	636	22:45	52	285	36	175
11:00	198	149			23:00	53	39		
11:15	176	179			23:15	53	23		
11:30	204	164			23:30	37	25		
11:45	220	798	158	650	23:45	42	185	22	109

Total Vol.	3675	8434		12109		11121	6626		17747
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					Daily Totals				
					NB	SB	EB	WB	Combined
					14796	15060			29856

	AM				PM			
Split %	30.3%	69.7%		40.6%	62.7%	37.3%		59.4%
Peak Hour	####	####	####	####	16:30	12:30		16:30
Volume	887	2255		2782	1768	903		2560
P.H.F.	0.92	0.97		0.99	0.97	0.94		#REF!

ADT2 17th west of Tustin.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:30			36	38	12:00			318	287			
00:15			33	29	12:15			322	299			
00:30			24	20	12:30			338	293			
00:45			18	111	15	102	213	348	1326	308	1187	2513
01:00			17	17	13:00			386	309			
01:15			19	15	13:15			370	267			
01:30			17	18	13:30			391	309			
01:45			9	62	9	59	121	320	1467	372	1257	2724
02:00			13	10	14:00			329	310			
02:15			13	10	14:15			302	287			
02:30			12	12	14:30			303	273			
02:45			10	48	8	40	88	347	1281	288	1158	2439
03:00			15	19	15:00			283	244			
03:15			9	13	15:15			317	267			
03:30			17	5	15:30			309	270			
03:45			12	53	14	51	104	345	1254	280	1061	2315
04:00			24	11	16:00			300	322			
04:15			8	22	16:15			327	272			
04:30			31	30	16:30			315	324			
04:45			38	101	25	88	189	339	1281	289	1207	2488
05:00			48	45	17:00			380	283			
05:15			65	45	17:15			364	313			
05:30			53	56	17:30			367	294			
05:45			62	228	67	213	441	336	1447	282	1172	2619
06:00			67	73	18:00			368	311			
06:15			98	104	18:15			312	248			
06:30			109	125	18:30			259	256			
06:45			187	461	133	435	896	222	1161	224	1039	2200
07:00			181	164	19:00			277	206			
07:15			232	217	19:15			254	200			
07:30			260	233	19:30			218	172			
07:45			324	997	213	827	1824	208	957	226	804	1761
08:00			257	188	20:00			218	151			
08:15			265	187	20:15			200	185			
08:30			213	172	20:30			198	201			
08:45			214	949	158	705	1654	169	785	176	713	1498
09:00			254	155	21:00			173	187			
09:15			203	178	21:15			145	145			
09:30			240	184	21:30			121	137			
09:45			256	953	232	749	1702	143	582	97	566	1148
10:00			254	196	22:00			119	108			
10:15			243	173	22:15			80	82			
10:30			264	206	22:30			84	82			
10:45			280	1041	227	802	1843	55	338	55	327	665
11:00			268	219	23:00			65	54			
11:15			262	234	23:15			51	39			
11:30			305	276	23:30			42	38			
11:45			327	1162	246	975	2137	36	194	39	170	364

Total Vol. 6166 5046 **11212** 12073 10661 **22734**

		Daily Totals			
	NB	SB	EB	WB	Combined
			18239	15707	33946

		AM			PM			
Split %		55.0%	45.0%	33.0%	53.1%	46.9%	67.0%	
Peak Hour	####	####	####	####	#VALUE!	12:45	13:30	13:00
Volume		1305	1125	2430		1495	1278	2724
P.H.F.		0.97	0.94	0.96		0.96	0.86	#REF!

ADT3 17th east of Tustin.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:30			58	40	12:00			366	281			
00:15			32	23	12:15			357	303			
00:30			36	29	12:30			380	303			
00:45			26	152	12:45			386	1489	348	1235	2724
01:00			15	14	13:00			393	335			
01:15			14	19	13:15			320	360			
01:30			27	20	13:30			337	379			
01:45			18	74	13:45			393	1443	334	1408	2851
02:00			20	17	14:00			388	325			
02:15			15	16	14:15			371	354			
02:30			15	15	14:30			369	347			
02:45			22	72	14:45			355	1483	380	1406	2889
03:00			20	18	15:00			370	347			
03:15			13	13	15:15			375	355			
03:30			15	13	15:30			362	367			
03:45			31	79	15:45			360	1467	373	1442	2909
04:00			28	23	16:00			391	327			
04:15			43	21	16:15			370	374			
04:30			59	50	16:30			406	359			
04:45			64	194	16:45			399	1566	373	1433	2999
05:00			64	58	17:00			433	369			
05:15			87	78	17:15			406	389			
05:30			120	65	17:30			420	388			
05:45			138	409	17:45			393	1652	361	1507	3159
06:00			177	106	18:00			391	370			
06:15			244	134	18:15			352	353			
06:30			317	114	18:30			349	304			
06:45			334	1072	18:45			314	1406	259	1286	2692
07:00			361	194	19:00			288	277			
07:15			375	269	19:15			253	232			
07:30			339	271	19:30			258	235			
07:45			341	1416	19:45			265	1064	185	929	1993
08:00			344	386	20:00			211	192			
08:15			344	405	20:15			212	206			
08:30			320	323	20:30			248	219			
08:45			299	1307	20:45			196	867	188	805	1672
09:00			237	273	21:00			206	185			
09:15			281	264	21:15			169	147			
09:30			293	297	21:30			166	166			
09:45			289	1100	21:45			113	654	139	637	1291
10:00			260	276	22:00			142	113			
10:15			240	291	22:15			104	109			
10:30			318	299	22:30			121	88			
10:45			290	1108	22:45			79	446	72	382	828
11:00			282	307	23:00			68	67			
11:15			328	312	23:15			56	66			
11:30			351	337	23:30			59	48			
11:45			304	1265	23:45			53	236	43	224	460

Total Vol. 8248 7516 **15764** 13773 12694 **26467**

Daily Totals				
NB	SB	EB	WB	Combined
		22021	20210	42231

AM					PM					
Split %				37.3%					62.7%	
Peak Hour	####	####	####	####	#VALUE!			16:45	16:45	16:45
Volume			1416	1512	2861			1658	1519	3177
P.H.F.			0.94	0.93	0.95			0.96	0.98	#REF!

ADT4 17th east of Carroll.

Prepared by AimTD tel. 714 253 7888

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:30			43	17	12:00			291	274			
00:15			26	31	12:15			290	286			
00:30			26	18	12:30			252	267			
00:45			15	110	17	83	193	332	1165	280	1107	2272
01:00			16	11	13:00			375	301			
01:15			12	14	13:15			295	374			
01:30			15	5	13:30			337	343			
01:45			17	60	6	36	96	300	1307	270	1288	2595
02:00			14	8	14:00			298	299			
02:15			13	10	14:15			299	291			
02:30			10	5	14:30			273	311			
02:45			10	47	3	26	73	293	1163	410	1311	2474
03:00			4	6	15:00			319	389			
03:15			5	7	15:15			315	366			
03:30			5	6	15:30			289	366			
03:45			6	20	14	33	53	272	1195	365	1486	2681
04:00			7	12	16:00			299	418			
04:15			10	24	16:15			303	399			
04:30			16	30	16:30			330	420			
04:45			18	51	36	102	153	341	1273	411	1648	2921
05:00			25	42	17:00			324	447			
05:15			21	82	17:15			319	448			
05:30			37	72	17:30			352	443			
05:45			64	147	87	283	430	338	1333	390	1728	3061
06:00			71	134	18:00			376	395			
06:15			114	181	18:15			338	382			
06:30			153	215	18:30			285	318			
06:45			195	533	260	790	1323	251	1250	301	1396	2646
07:00			248	296	19:00			268	221			
07:15			358	342	19:15			234	186			
07:30			355	407	19:30			243	190			
07:45			368	1329	445	1490	2819	212	957	154	751	1708
08:00			373	380	20:00			193	168			
08:15			317	438	20:15			241	154			
08:30			324	368	20:30			201	159			
08:45			336	1350	288	1474	2824	202	837	176	657	1494
09:00			222	252	21:00			185	128			
09:15			220	220	21:15			165	134			
09:30			236	243	21:30			160	94			
09:45			265	943	256	971	1914	119	629	85	441	1070
10:00			198	246	22:00			134	78			
10:15			177	239	22:15			129	76			
10:30			239	282	22:30			86	64			
10:45			238	852	234	1001	1853	85	434	38	256	690
11:00			225	253	23:00			61	48			
11:15			252	284	23:15			60	35			
11:30			243	283	23:30			43	30			
11:45			275	995	291	1111	2106	48	212	21	134	346

Total Vol. 6437 7400 **13837** 11755 12203 **23958**

Daily Totals				
NB	SB	EB	WB	Combined
		18192	19603	37795

AM				PM				
Split %								
	46.5%	53.5%	36.6%	49.1%	50.9%	63.4%		
Peak Hour	####	####	####	####	#VALUE!	17:30	16:45	16:45
Volume		1454	1670	3083		1404	1749	3085
P.H.F.		0.97	0.94	0.95		0.93	0.98	#REF!

Appendix B – Existing Conditions Intersection Analysis Worksheets

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.851
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Tustin Ave						Santa Clara Ave					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	62	405	105	112	2600	93	100	288	187	112	202	109
Growth 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
Initial Bse:	62	405	105	112	2600	93	100	288	187	112	202	109
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	64	418	108	116	2683	96	103	297	193	116	208	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	64	418	108	116	2683	96	103	297	193	116	208	112
PCE 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
MLF 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
FinalVolume:	64	418	108	116	2683	96	103	297	193	116	208	112

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.38	0.62	2.00	2.90	0.10	1.00	1.21	0.79	1.00	1.30	0.70
Final Sat.:	1600	4050	1050	3200	4924	176	1600	2061	1339	1600	2208	1192

Capacity Analysis Module:

Vol/Sat:	0.04	0.10	0.10	0.04	0.54	0.54	0.06	0.14	0.14	0.07	0.09	0.09
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.757
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	105	189	209	549	1769	20	180	673	132	541	760	206
Growth 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
Initial Bse:	105	189	209	549	1769	20	180	673	132	541	760	206
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	108	195	216	567	1827	21	186	695	136	559	785	213
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	195	216	567	1827	21	186	695	136	559	785	213
PCE 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
MLF 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
FinalVolume:	108	195	216	567	1827	21	186	695	136	559	785	213
OvlAdjVol:	0									0		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.97	0.03	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	5043	57	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.03	0.06	0.11	0.18	0.36	0.36	0.06	0.14	0.08	0.17	0.15	0.11
OvlAdjV/S:	0.00									0.00		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.593
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:												
Base Vol:	32	405	131	210	2151	75	25	16	79	26	6	39
Growth 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
Initial Bse:	32	405	131	210	2151	75	25	16	79	26	6	39
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	34	425	137	220	2255	79	26	17	83	27	6	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	425	137	220	2255	79	26	17	83	27	6	41
PCE 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
MLF 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
FinalVolume:	34	425	137	220	2255	79	26	17	83	27	6	41

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.90	0.10	0.61	0.39	1.00	0.81	0.19	1.00
Final Sat.:	1600	5100	1700	3200	4928	172	1037	663	1700	1381	319	1700

Capacity Analysis Module:												
Vol/Sat:	0.02	0.08	0.08	0.07	0.46	0.46	0.02	0.03	0.05	0.02	0.02	0.02
Crit Moves:	****				****				****	****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.517
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Sherry Ln - Cabrillo Park Ave						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	119	39	85	78	94	29	11	769	221	165	838	30
Growth 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
Initial Bse:	119	39	85	78	94	29	11	769	221	165	838	30
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	125	41	89	82	99	31	12	809	233	174	882	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	41	89	82	99	31	12	809	233	174	882	32
PCE 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
MLF 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
FinalVolume:	125	41	89	82	99	31	12	809	233	174	882	32

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.76	0.24	1.00	2.33	0.67	1.00	2.90	0.10
Final Sat.:	1600	1700	1700	1600	1299	401	1600	3962	1138	1600	4924	176

Capacity Analysis Module:

Vol/Sat:	0.08	0.02	0.05	0.05	0.08	0.08	0.01	0.20	0.20	0.11	0.18	0.18
Crit Moves:	****				****			****			****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.7]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	107		0	0	22		0	1414	22	0	1495	33
Growth 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
Initial Bse:	0	0	107		0	0	22		0	1414	22	0	1495	33
User 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
PHF Adj:	0.96	0.96	0.96		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	112		0	0	23		0	1478	23	0	1562	34
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0	0
Final Volume:	0	0	112		0	0	23		0	1478	23	0	1562	34

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx






















Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflct Vol:	xxxx	xxxx	381		xxxx	xxxx	538		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	623		xxxx	xxxx	493		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	623		xxxx	xxxx	493		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.18		xxxx	xxxx	0.05		xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	0.6		xxxx	xxxx	0.1		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.0		xxxxx	xxxx	12.7		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B		*	*	B		*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shared Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*		*	*	*		*	*	*	*	*	*
ApproachDel:	12.0				12.7				xxxxxx			xxxxxx		
ApproachLOS:	B				B				*			*		

Note: Queue reported is the number of cars per lane.

Existing 2016
6: SR-55 SB On-Ramp/Deodar St & 17th St

AM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	932	582	322	1498	43	0	0	0	42	224	22
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	19	991	0	343	1594	46				45	238	23
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	28	1689	605	392	2731	79				313	295	29
Arrive On Green	0.02	0.37	0.00	0.25	0.60	0.60				0.20	0.20	0.20
Sat Flow, veh/h	1587	4550	1629	1587	4546	131				1587	1497	145
Grp Volume(v), veh/h	19	991	0	343	1064	576				45	0	261
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1644				1587	0	1641
Q Serve(g_s), s	0.9	12.8	0.0	15.2	15.8	15.8				1.7	0.0	11.1
Cycle Q Clear(g_c), s	0.9	12.8	0.0	15.2	15.8	15.8				1.7	0.0	11.1
Prop In Lane	1.00		1.00	1.00		0.08				1.00		0.09
Lane Grp Cap(c), veh/h	28	1689	605	392	1822	987				313	0	324
V/C Ratio(X)	0.68	0.59	0.00	0.88	0.58	0.58				0.14	0.00	0.81
Avail Cap(c_a), veh/h	128	1774	635	706	2286	1239				554	0	572
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	35.7	18.5	0.0	26.4	9.0	9.0				24.2	0.0	28.0
Incr Delay (d2), s/veh	25.6	0.5	0.0	6.3	0.3	0.6				0.2	0.0	4.8
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	0.6	5.4	0.0	7.4	6.6	7.2				0.8	0.0	5.4
LnGrp Delay(d),s/veh	61.3	18.9	0.0	32.7	9.3	9.5				24.5	0.0	32.8
LnGrp LOS	E	B		C	A	A				C		C
Approach Vol, veh/h		1010			1983						306	
Approach Delay, s/veh		19.7			13.4						31.6	
Approach LOS		B			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			22.6	31.6		18.9	5.8	48.4				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			32.5	28.5		25.5	5.9	55.1				
Max Q Clear Time (g_c+I1), s			17.2	14.8		13.1	2.9	17.8				
Green Ext Time (p_c), s			0.9	11.7		1.3	0.0	26.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.0									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

-----|-----|-----|-----|

Control: Yield Sign Yield Sign Uncontrolled Uncontrolled

Rights: Ignore Ignore Include Include

Lanes: 0 0 0 0 1 0 0 0 0 1 0 0 3 0 0 0 0 2 0 0

-----|-----|-----|-----|

Volume Module:

Base Vol: 0 0 666 0 0 395 0 974 0 0 1468 0

Growth 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

Initial Bse: 0 0 666 0 0 395 0 974 0 0 1468 0

User Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.85 0.85 0.00 0.85 0.85 0.00 0.85 0.85 0.85 0.85 0.85 0.85

PHF Volume: 0 0 0 0 0 0 0 1145 0 0 1725 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 0 0 0 0 0 0 1145 0 0 1725 0

-----|-----|-----|-----|

Critical Gap Module:

Critical Gp:xxxxx xxxx 6.9 xxxxx xxxx 6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx

FollowUpTim:xxxxx xxxx 3.3 xxxxx xxxx 3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx

-----|-----|-----|-----|

Capacity Module:

Cnflict Vol: xxxx xxxx 382 xxxx xxxx 863 xxxx xxxx xxxxx xxxx xxxx xxxxx

Potent Cap.: xxxx xxxx 622 xxxx xxxx 302 xxxx xxxx xxxxx xxxx xxxx xxxxx

Move Cap.: xxxx xxxx 622 xxxx xxxx 302 xxxx xxxx xxxxx xxxx xxxx xxxxx

Volume/Cap: xxxx xxxx 0.00 xxxx xxxx 0.00 xxxx xxxx xxxxx xxxx xxxx xxxxx

-----|-----|-----|-----|

Level Of Service Module:

2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx

Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

LOS by Move: *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx

SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

Shared LOS: *

ApproachDel: xxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx

ApproachLOS: *

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:

Base Vol:	0	0	0	0	0	0	0	1331	309	0	1468	727
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1331	309	0	1468	727
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.00
PHF Volume:	0	0	0	0	0	0	0	1420	0	0	1567	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1420	0	0	1567	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.511
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	328	27	356	1	0	99	28	1299	0	0	1759	36
Growth 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
Initial Bse:	328	27	356	1	0	99	28	1299	0	0	1759	36
User Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF 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
PHF Volume:	316	26	343	1	0	95	27	1252	0	0	1696	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	316	26	343	1	0	95	27	1252	0	0	1696	35
PCE 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
MLF 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
FinalVolume:	316	26	343	1	0	95	27	1252	0	0	1696	35

Saturation Flow Module:




















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.38	0.11	1.51	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2353	194	2554	17	0	1683	1700	5100	0	0	6664	136

Capacity Analysis Module:

Vol/Sat:	0.13	0.13	0.13	0.06	0.00	0.06	0.02	0.25	0.00	0.00	0.25	0.25
Crit Moves:	****			****			****			****		

Existing 2016
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

AM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1299	0	0	1759	36	328	27	356	1	0	99
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.92	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1370	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1370	1346		1443	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	29	1353	0	0	1832	38	342	28	371	1	0	103
RTOR Reduction (vph)	0	0	0	0	2	0	0	42	180	0	98	0
Lane Group Flow (vph)	29	1353	0	0	1868	0	256	206	57	0	6	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	1.5	42.3			36.3		19.3	19.3	19.3		5.0	
Effective Green, g (s)	1.5	42.3			36.3		19.3	19.3	19.3		5.0	
Actuated g/C Ratio	0.02	0.53			0.45		0.24	0.24	0.24		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	29	2402			2590		362	330	324		90	
v/s Ratio Prot	0.02	c0.30			c0.33		c0.17	0.15			c0.00	
v/s Ratio Perm									0.04			
v/c Ratio	1.00	0.56			0.72		0.71	0.63	0.18		0.07	
Uniform Delay, d1	39.3	12.7			17.8		27.8	27.2	24.1		35.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	167.1	0.3			1.0		6.2	3.7	0.3		0.3	
Delay (s)	206.4	13.0			18.8		34.0	30.8	24.4		35.7	
Level of Service	F	B			B		C	C	C		D	
Approach Delay (s)		17.1			18.8			29.9			35.7	
Approach LOS		B			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			20.6				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			80.1				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			62.6%				ICU Level of Service				B	
Analysis Period (min)			15									
c Critical Lane Group												

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.535
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Base Vol:	130	22	21	48	47	98	58	1328	270	93	1557	42
Growth 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
Initial Bse:	130	22	21	48	47	98	58	1328	270	93	1557	42
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	134	23	22	49	48	101	60	1366	278	96	1602	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	134	23	22	49	48	101	60	1366	278	96	1602	43
PCE 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
MLF 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
FinalVolume:	134	23	22	49	48	101	60	1366	278	96	1602	43

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.32	0.68	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	3400	1700	1700	1700	551	1149	1700	5100	1700	1700	4966	134

Capacity Analysis Module:

Vol/Sat:	0.04	0.01	0.01	0.03	0.09	0.09	0.04	0.27	0.16	0.06	0.32	0.32
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	20	31	21	228	262	280	106	1300	35	46	1389	57
Growth 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
Initial Bse:	20	31	21	228	262	280	106	1300	35	46	1389	57
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	20	32	21	233	268	287	108	1331	36	47	1422	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	32	21	233	268	287	108	1331	36	47	1422	58
PCE 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
MLF 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
FinalVolume:	20	32	21	233	268	287	108	1331	36	47	1422	58

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.88	0.12
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4966	134	1700	4899	201

Capacity Analysis Module:

Vol/Sat:	0.01	0.02	0.01	0.14	0.16	0.17	0.06	0.27	0.27	0.03	0.29	0.29
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.355
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	0	1	0	1	0

Volume Module:

Base Vol:	0	101	44	14	357	2	0	1	0	255	0	50
Growth 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
Initial Bse:	0	101	44	14	357	2	0	1	0	255	0	50
User 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
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	0	120	52	17	424	2	0	1	0	303	0	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	120	52	17	424	2	0	1	0	303	0	59
PCE 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
MLF 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
FinalVolume:	0	120	52	17	424	2	0	1	0	303	0	59

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.39	0.61	1.00	1.99	0.01	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1700	2368	1032	1700	3381	19	0	1700	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.05	0.05	0.01	0.13	0.13	0.00	0.00	0.00	0.18	0.00	0.03
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	0	1	527	0	0	2327	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	0	1	561	0	0	2476	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2762	3043	1243	1801	3048	280	2485	0	0	561	0	0
Stage 1	2480	2480	-	563	563	-	-	-	-	-	-	-
Stage 2	282	563	-	1238	2485	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	9	13	166	50	12	717	182	-	-	1006	-	-
Stage 1	30	58	-	478	507	-	-	-	-	-	-	-
Stage 2	701	507	-	186	58	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	9	13	166	44	12	717	182	-	-	1006	-	-
Mov Cap-2 Maneuver	9	13	-	44	12	-	-	-	-	-	-	-
Stage 1	30	58	-	475	504	-	-	-	-	-	-	-
Stage 2	697	504	-	165	58	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.5	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	182	-	-	166	-	1006	-
HCM Lane V/C Ratio	0.006	-	-	0.115	-	-	-
HCM Control Delay (s)	24.9	-	-	29.5	0	0	-
HCM Lane LOS	C	-	-	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-

Intersection												
Int Delay, s/veh	0.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	33	0	0	0	1	526	0	0	2307	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	0	1	560	0	0	2454	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2753	3033	1244	1544	3049	280	2487	0	0	560	0	0
Stage 1	2471	2471	-	562	562	-	-	-	-	-	-	-
Stage 2	282	562	-	982	2487	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	14	13	142	97	12	717	70	-	-	1007	-	-
Stage 1	17	59	-	464	508	-	-	-	-	-	-	-
Stage 2	676	508	-	247	58	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	14	13	142	72	12	717	70	-	-	1007	-	-
Mov Cap-2 Maneuver	16	50	-	145	49	-	-	-	-	-	-	-
Stage 1	17	59	-	454	497	-	-	-	-	-	-	-
Stage 2	662	497	-	186	58	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.5	0	0.7	0
HCM LOS	E	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	70	-	-	142	-	1007	-
HCM Lane V/C Ratio	0.015	-	-	0.247	-	-	-
HCM Control Delay (s)	57.2	0.6	-	38.5	0	0	-
HCM Lane LOS	F	A	-	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	33	22	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	36	24	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	60	24	24
Stage 1	24	-	-
Stage 2	36	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	947	1052	1591
Stage 1	999	-	-
Stage 2	986	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	947	1052	1591
Mov Cap-2 Maneuver	947	-	-
Stage 1	999	-	-
Stage 2	986	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1591	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	24.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	28	4	0	58	18	472	11	37	2615	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	29	4	0	59	18	482	11	38	2668	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3034	3286	1346	1667	3291	246	2692	0	0	493	0	0
Stage 1	2756	2756	-	524	524	-	-	-	-	-	-	-
Stage 2	278	530	-	1143	2767	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 9	9	121	80	9	754	55	-	-	1067	-	-
Stage 1	~ 11	42	-	489	528	-	-	-	-	-	-	-
Stage 2	680	525	-	195	41	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 6	6	121	44	6	754	55	-	-	1067	-	-
Mov Cap-2 Maneuver	~ 6	6	-	44	6	-	-	-	-	-	-	-
Stage 1	~ 7	41	-	329	355	-	-	-	-	-	-	-
Stage 2	422	353	-	144	40	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 1641.1	16.8	3.6	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	55	-	-	14	369	1067	-	-
HCM Lane V/C Ratio	0.334	-	-	3.426	0.171	0.035	-	-
HCM Control Delay (s)	100.3	-	-	\$ 1641.1	16.8	8.5	-	-
HCM Lane LOS	F	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	1.2	-	-	6.9	0.6	0.1	-	-

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

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.652
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:	Tustin Ave			Tustin Ave			Santa Clara Ave			Santa Clara Ave		
Base Vol:	189	1571	129	175	898	94	142	175	128	74	222	141
Growth 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
Initial Bse:	189	1571	129	175	898	94	142	175	128	74	222	141
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	195	1620	133	180	926	97	146	180	132	76	229	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	195	1620	133	180	926	97	146	180	132	76	229	145
PCE 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
MLF 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
FinalVolume:	195	1620	133	180	926	97	146	180	132	76	229	145

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.77	0.23	2.00	2.72	0.28	1.00	1.16	0.84	1.00	1.22	0.78
Final Sat.:	1600	4713	387	3200	4617	483	1600	1964	1436	1600	2079	1321

Capacity Analysis Module:

Vol/Sat:	0.12	0.34	0.34	0.06	0.20	0.20	0.09	0.09	0.09	0.05	0.11	0.11
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.921
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	315	1188	564	451	444	41	419	917	126	231	973	375
Growth 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
Initial Bse:	315	1188	564	451	444	41	419	917	126	231	973	375
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	338	1275	605	484	476	44	450	984	135	248	1044	402
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	1275	605	484	476	44	450	984	135	248	1044	402
PCE 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
MLF 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
FinalVolume:	338	1275	605	484	476	44	450	984	135	248	1044	402
OvlAdjVol:	454									107		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.75	0.25	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4669	431	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.11	0.37	0.31	0.15	0.10	0.10	0.14	0.19	0.08	0.08	0.20	0.21
OvlAdjV/S:	0.23									0.05		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.578
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	93	1509	73	98	531	105	64	3	65	51	14	217
Growth 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
Initial Bse:	93	1509	73	98	531	105	64	3	65	51	14	217
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	100	1619	78	105	570	113	69	3	70	55	15	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	1619	78	105	570	113	69	3	70	55	15	233
PCE 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
MLF 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
FinalVolume:	100	1619	78	105	570	113	69	3	70	55	15	233

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.50	0.50	0.96	0.04	1.00	0.78	0.22	1.00
Final Sat.:	1600	5100	1700	3200	4258	842	1624	76	1700	1334	366	1700

Capacity Analysis Module:

Vol/Sat:	0.06	0.32	0.05	0.03	0.13	0.13	0.04	0.04	0.04	0.03	0.04	0.14
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.607
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:		17th St														
Approach:		North Bound			South Bound			East Bound			West Bound					
Movement:		L	T	R	L	T	R	L	T	R	L	T	R			
Control:		Permitted			Permitted			Protected			Protected					
Rights:		Include			Include			Include			Include					
Min. Green:		0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:		1	0	1	0	1	1	0	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	285	125	147	126	60	48	42	960	97	127	1195	63
Growth 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
Initial Bse:	285	125	147	126	60	48	42	960	97	127	1195	63
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	301	132	155	133	63	51	44	1013	102	134	1261	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	301	132	155	133	63	51	44	1013	102	134	1261	66
PCE 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
MLF 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
FinalVolume:	301	132	155	133	63	51	44	1013	102	134	1261	66

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.56	0.44	1.00	2.72	0.28	1.00	2.85	0.15
Final Sat.:	1600	1700	1700	1600	944	756	1600	4632	468	1600	4845	255

Capacity Analysis Module:

Vol/Sat:	0.19	0.08	0.09	0.08	0.07	0.07	0.03	0.22	0.22	0.08	0.26	0.26
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[13.7]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	11	0	0	36	0	1747	213	0	1557	76
Growth 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
Initial Bse:	0	0	11	0	0	36	0	1747	213	0	1557	76
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	12	0	0	39	0	1874	229	0	1671	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	12	0	0	39	0	1874	229	0	1671	82

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	583	xxxx	xxxx	598	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	461	xxxx	xxxx	451	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	461	xxxx	xxxx	451	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.03	xxxx	xxxx	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.0	xxxxx	xxxx	13.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.0			13.7			xxxxxxx			xxxxxxx		
ApproachLOS:	B			B			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.581
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	13	39	11	43	1164	514	400	1519	63
Growth 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
Initial Bse:	0	0	0	13	39	11	43	1164	514	400	1519	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96
PHF Volume:	0	0	0	14	41	12	45	1218	0	418	1589	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	41	12	45	1218	0	418	1589	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	41	12	45	1218	0	418	1589	66

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.78	0.22	1.00	3.00	1.00	1.00	2.88	0.12
Final Sat.:	0	0	0	1600	1326	374	1600	5100	1955	1600	4897	203

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.03	0.03	0.03	0.24	0.00	0.26	0.32	0.32
Crit Moves:				****			****			****		

Existing 2016
6: SR-55 SB On-Ramp/Deodar St & 17th St

PM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	1164	514	400	1519	63	0	0	0	13	39	11
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	45	1212	0	417	1582	66				14	41	11
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	54	2064	739	473	3215	134				72	58	15
Arrive On Green	0.03	0.45	0.00	0.30	0.72	0.72				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4480	187				1587	1267	340
Grp Volume(v), veh/h	45	1212	0	417	1071	577				14	0	52
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1634				1587	0	1607
Q Serve(g_s), s	1.9	13.2	0.0	16.6	10.3	10.3				0.6	0.0	2.1
Cycle Q Clear(g_c), s	1.9	13.2	0.0	16.6	10.3	10.3				0.6	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.11				1.00		0.21
Lane Grp Cap(c), veh/h	54	2064	739	473	2177	1172				72	0	73
V/C Ratio(X)	0.84	0.59	0.00	0.88	0.49	0.49				0.19	0.00	0.71
Avail Cap(c_a), veh/h	179	2223	796	871	2804	1510				418	0	423
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	32.0	13.5	0.0	22.2	4.1	4.1				30.6	0.0	31.3
Incr Delay (d2), s/veh	26.8	0.4	0.0	5.6	0.2	0.3				1.3	0.0	12.0
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	1.2	5.6	0.0	8.0	4.2	4.6				0.3	0.0	1.2
LnGrp Delay(d),s/veh	58.8	13.9	0.0	27.8	4.3	4.4				31.9	0.0	43.3
LnGrp LOS	E	B		C	A	A				C		D
Approach Vol, veh/h		1257			2065							66
Approach Delay, s/veh		15.5			9.1							40.9
Approach LOS		B			A							D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			24.3	34.7		7.5	6.8	52.2				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			36.5	32.5		17.5	7.5	61.5				
Max Q Clear Time (g_c+I1), s			18.6	15.2		4.1	3.9	12.3				
Green Ext Time (p_c), s			1.2	15.0		0.2	0.0	34.7				
Intersection Summary												
HCM 2010 Ctrl Delay			12.1									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Yield Sign Yield Sign Uncontrolled Uncontrolled

Rights: Ignore Ignore Include Include

Lanes: 0 0 0 0 1 0 0 0 0 1 0 0 3 0 0 0 0 2 0 0

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Volume Module:

Base Vol: 0 0 767 0 0 435 0 1177 0 0 1547 0

Growth 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

Initial Bse: 0 0 767 0 0 435 0 1177 0 0 1547 0

User Adj: 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00

PHF Adj: 0.93 0.93 0.00 0.93 0.93 0.00 0.93 0.93 0.93 0.93 0.93 0.93

PHF Volume: 0 0 0 0 0 0 0 1267 0 0 1665 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 0 0 0 0 0 0 1267 0 0 1665 0

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Critical Gap Module:

Critical Gp:xxxxx xxxx 6.9 xxxxx xxxx 6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx

FollowUpTim:xxxxx xxxx 3.3 xxxxx xxxx 3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx

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Capacity Module:

Cnflct Vol: xxxx xxxx 422 xxxx xxxx 833 xxxx xxxx xxxxx xxxx xxxx xxxxx

Potent Cap.: xxxx xxxx 586 xxxx xxxx 316 xxxx xxxx xxxxx xxxx xxxx xxxxx

Move Cap.: xxxx xxxx 586 xxxx xxxx 316 xxxx xxxx xxxxx xxxx xxxx xxxxx

Volume/Cap: xxxx xxxx 0.00 xxxx xxxx 0.00 xxxx xxxx xxxxx xxxx xxxx xxxxx

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Level Of Service Module:

2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx

Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

LOS by Move: *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx

SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

Shared LOS: *

ApproachDel: xxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx

ApproachLOS: *

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
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Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound				South Bound				East Bound			West Bound		
Movement:	L	T	R		L	T	R		L	T	R	L	T	R
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled		
Rights:	Include				Include				Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:

Base Vol:	0	0	0	0	0	0	0	0	0	1458	486	0	1547	826
Growth 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	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	1458	486	0	1547	826
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.00	0.95	0.95	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	1532	0	0	1625	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	1532	0	0	1625	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT		LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx		
ApproachLOS:	*				*				*				*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.678
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Mimi's Café - SR55 NB Ramps 17th St											
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	404	24	199	2	0	98	64	1387	0	0	1906	35
Growth 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
Initial Bse:	404	24	199	2	0	98	64	1387	0	0	1906	35
User 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
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	428	25	211	2	0	104	68	1469	0	0	2019	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	428	25	211	2	0	104	68	1469	0	0	2019	37
PCE 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
MLF 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
FinalVolume:	428	25	211	2	0	104	68	1469	0	0	2019	37

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.93	0.07	1.00	0.02	0.00	0.98	1.00	3.00	0.00	0.00	3.93	0.07
Final Sat.:	3286	114	1700	34	0	1666	1700	5100	0	0	6677	123

Capacity Analysis Module:

Vol/Sat:	0.13	0.22	0.12	0.06	0.00	0.06	0.04	0.29	0.00	0.00	0.30	0.30
Crit Moves:	****			****			****			****		

Existing 2016
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

PM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	1387	0	0	1906	35	404	24	199	2	0	98
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.99	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (prot)	1583	4550			5718		1504	1439	1346		1445	
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (perm)	1583	4550			5718		1504	1439	1346		1445	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	68	1476	0	0	2028	37	430	26	212	2	0	104
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	150	0	100	0
Lane Group Flow (vph)	68	1476	0	0	2063	0	241	233	41	0	6	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	4.7	48.0			38.8		18.0	18.0	18.0		5.1	
Effective Green, g (s)	4.7	48.0			38.8		18.0	18.0	18.0		5.1	
Actuated g/C Ratio	0.06	0.57			0.46		0.21	0.21	0.21		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	87	2581			2622		320	306	286		87	
v/s Ratio Prot	0.04	c0.32			c0.36		0.16	c0.16			c0.00	
v/s Ratio Perm									0.03			
v/c Ratio	0.78	0.57			0.79		0.75	0.76	0.14		0.07	
Uniform Delay, d1	39.4	11.7			19.4		31.2	31.3	27.0		37.5	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	35.5	0.3			1.6		9.6	10.6	0.2		0.4	
Delay (s)	74.9	12.0			21.0		40.8	41.9	27.3		37.9	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		14.8			21.0			37.3			37.9	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			21.7				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			84.6				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			68.9%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.655
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	323	83	92	102	26	133	127	1276	182	44	1500	31
Growth 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
Initial Bse:	323	83	92	102	26	133	127	1276	182	44	1500	31
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	347	89	99	110	28	143	136	1371	195	47	1611	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	347	89	99	110	28	143	136	1371	195	47	1611	33
PCE 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
MLF 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
FinalVolume:	347	89	99	110	28	143	136	1371	195	47	1611	33

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.16	0.84	1.00	3.00	1.00	1.00	2.94	0.06
Final Sat.:	3400	1700	1700	1700	278	1422	1700	5100	1700	1700	4997	103

Capacity Analysis Module:

Vol/Sat:	0.10	0.05	0.06	0.06	0.10	0.10	0.08	0.27	0.11	0.03	0.32	0.32
Crit Moves:	****				****		****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	80	163	30	81	72	140	192	1190	46	56	1380	205
Growth 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
Initial Bse:	80	163	30	81	72	140	192	1190	46	56	1380	205
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	167	31	83	74	144	197	1222	47	57	1417	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	167	31	83	74	144	197	1222	47	57	1417	210
PCE 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
MLF 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
FinalVolume:	82	167	31	83	74	144	197	1222	47	57	1417	210

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.89	0.11	1.00	2.61	0.39
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4910	190	1700	4440	660

Capacity Analysis Module:

Vol/Sat:	0.05	0.10	0.02	0.05	0.04	0.08	0.12	0.25	0.25	0.03	0.32	0.32
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.279
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	0	0	1	0

Volume Module:

Base Vol:	1	333	118	27	168	3	2	1	0	63	0	114
Growth 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
Initial Bse:	1	333	118	27	168	3	2	1	0	63	0	114
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	352	125	29	177	3	2	1	0	67	0	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	352	125	29	177	3	2	1	0	67	0	120
PCE 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
MLF 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
FinalVolume:	1	352	125	29	177	3	2	1	0	67	0	120

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.48	0.52	1.00	1.96	0.04	0.67	0.33	0.00	1.00	0.00	1.00
Final Sat.:	1700	2510	890	1700	3340	60	1133	567	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.14	0.14	0.02	0.05	0.05	0.00	0.00	0.00	0.04	0.00	0.07
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	0	5	0	0	0	5	1950	0	0	897	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	0	0	0	5	2097	0	0	965	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2025	3074	483	2590	3075	1048	967	0	0	2097	0	0
Stage 1	966	966	-	2108	2108	-	-	-	-	-	-	-
Stage 2	1059	2108	-	482	967	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	34	12	530	12	12	224	708	-	-	259	-	-
Stage 1	273	331	-	52	91	-	-	-	-	-	-	-
Stage 2	240	91	-	534	331	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	34	12	530	12	12	224	708	-	-	259	-	-
Mov Cap-2 Maneuver	34	12	-	12	12	-	-	-	-	-	-	-
Stage 1	271	331	-	52	90	-	-	-	-	-	-	-
Stage 2	238	90	-	529	331	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	63.5	0	0	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	708	-	-	71	-	259	-
HCM Lane V/C Ratio	0.008	-	-	0.136	-	-	-
HCM Control Delay (s)	10.1	-	-	63.5	0	0	-
HCM Lane LOS	B	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-

Intersection												
Int Delay, s/veh	0.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	0	48	0	0	0	8	1935	0	0	870	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	52	0	0	0	9	2081	0	0	935	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2012	3052	487	2472	3071	1040	973	0	0	2081	0	0
Stage 1	954	954	-	2098	2098	-	-	-	-	-	-	-
Stage 2	1058	2098	-	374	973	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	46	12	450	22	12	227	403	-	-	263	-	-
Stage 1	219	335	-	53	92	-	-	-	-	-	-	-
Stage 2	235	92	-	586	329	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	46	12	450	19	12	227	403	-	-	263	-	-
Mov Cap-2 Maneuver	124	69	-	46	69	-	-	-	-	-	-	-
Stage 1	219	335	-	53	92	-	-	-	-	-	-	-
Stage 2	235	92	-	519	329	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	0	0.1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	403	-	-	450	-	263	-
HCM Lane V/C Ratio	0.021	-	-	0.115	-	-	-
HCM Control Delay (s)	14.1	0	-	14	0	0	-
HCM Lane LOS	B	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	76	36	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	83	39	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	122	39	39
Stage 1	39	-	-
Stage 2	83	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	873	1033	1571
Stage 1	983	-	-
Stage 2	940	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	873	1033	1571
Mov Cap-2 Maneuver	873	-	-
Stage 1	983	-	-
Stage 2	940	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	7.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	22	4	2	50	43	1936	22	40	889	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	23	4	2	52	45	2017	23	42	926	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2133	3163	488	2572	3177	1020	976	0	0	2040	0	0
Stage 1	1034	1034	-	2118	2118	-	-	-	-	-	-	-
Stage 2	1099	2129	-	454	1059	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	38	10	450	19	10	234	402	-	-	273	-	-
Stage 1	193	308	-	51	90	-	-	-	-	-	-	-
Stage 2	221	89	-	524	299	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 19	8	450	15	8	234	402	-	-	273	-	-
Mov Cap-2 Maneuver	~ 19	8	-	15	8	-	-	-	-	-	-	-
Stage 1	171	261	-	45	80	-	-	-	-	-	-	-
Stage 2	149	79	-	421	253	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 357.9	134.7	0.3	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	402	-	-	38	77	273	-	-
HCM Lane V/C Ratio	0.111	-	-	1.151	0.758	0.153	-	-
HCM Control Delay (s)	15.1	-	-	\$ 357.9	134.7	20.5	-	-
HCM Lane LOS	C	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-	4.4	3.7	0.5	-	-

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

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.486
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Santa Clara Ave					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:

Base Vol:	138	743	101	126	898	92	140	128	142	73	114	111
Growth 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
Initial Bse:	138	743	101	126	898	92	140	128	142	73	114	111
User 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
PHF 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
PHF Volume:	139	747	102	127	903	92	141	129	143	73	115	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	747	102	127	903	92	141	129	143	73	115	112
PCE 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
MLF 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
FinalVolume:	139	747	102	127	903	92	141	129	143	73	115	112

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.64	0.36	2.00	2.72	0.28	1.00	1.00	1.00	1.00	1.01	0.99
Final Sat.:	1600	4490	610	3200	4626	474	1600	1700	1700	1600	1723	1677

Capacity Analysis Module:

Vol/Sat:	0.09	0.17	0.17	0.04	0.20	0.20	0.09	0.08	0.08	0.05	0.07	0.07
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.563
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	175	274	169	486	333	50	427	773	115	250	686	370
Growth 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
Initial Bse:	175	274	169	486	333	50	427	773	115	250	686	370
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	179	281	173	498	342	51	438	793	118	256	704	379
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	281	173	498	342	51	438	793	118	256	704	379
PCE 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
MLF 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
FinalVolume:	179	281	173	498	342	51	438	793	118	256	704	379
OvlAdjVol:	17									75		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.61	0.39	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4434	666	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.08	0.09	0.16	0.08	0.08	0.14	0.16	0.07	0.08	0.14	0.19
OvlAdjV/S:	0.01									0.04		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.296
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:

Base Vol:	82	466	25	98	458	134	53	4	66	14	13	60
Growth 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
Initial Bse:	82	466	25	98	458	134	53	4	66	14	13	60
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	86	489	26	103	481	141	56	4	69	15	14	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	489	26	103	481	141	56	4	69	15	14	63
PCE 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
MLF 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
FinalVolume:	86	489	26	103	481	141	56	4	69	15	14	63

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.32	0.68	0.93	0.07	1.00	0.52	0.48	1.00
Final Sat.:	1600	5100	1700	3200	3946	1154	1581	119	1700	881	819	1700

Capacity Analysis Module:

Vol/Sat:	0.05	0.10	0.02	0.03	0.12	0.12	0.03	0.04	0.04	0.01	0.02	0.04
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.506
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name: Sherry Ln - Cabrillo Park Ave						17th St							
Approach: North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	159	54	90	114	70	66	55	926	83	106	921	78
Growth 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
Initial Bse:	159	54	90	114	70	66	55	926	83	106	921	78
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	164	56	93	117	72	68	57	953	85	109	948	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	164	56	93	117	72	68	57	953	85	109	948	80
PCE 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
MLF 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
FinalVolume:	164	56	93	117	72	68	57	953	85	109	948	80

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.51	0.49	1.00	2.75	0.25	1.00	2.77	0.23
Final Sat.:	1600	1700	1700	1600	875	825	1600	4680	420	1600	4702	398

Capacity Analysis Module:

Vol/Sat:	0.10	0.03	0.05	0.07	0.08	0.08	0.04	0.20	0.20	0.07	0.20	0.20
Crit Moves:	****				****			****		****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.1]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	14	0	0	44	0	1352	76	0	1292	54
Growth 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
Initial Bse:	0	0	14	0	0	44	0	1352	76	0	1292	54
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	14	0	0	45	0	1377	77	0	1316	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Volume:	0	0	14	0	0	45	0	1377	77	0	1316	55

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx






















Capacity Module:

Cnflct Vol:	xxxx	xxxx	383	xxxx	xxxx	466	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	621	xxxx	xxxx	549	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	621	xxxx	xxxx	549	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.02	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	10.9	xxxxx	xxxx	12.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	10.9			12.1			xxxxxxx			xxxxxxx		
ApproachLOS:	B			B			*			*		

Note: Queue reported is the number of cars per lane.

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	837	447	437	1380	47	0	0	0	29	28	12
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	53	1033	0	540	1704	58				36	35	15
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81				0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	63	1696	607	597	3204	109				81	57	24
Arrive On Green	0.04	0.37	0.00	0.38	0.71	0.71				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4519	154				1587	1108	475
Grp Volume(v), veh/h	53	1033	0	540	1143	619				36	0	50
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1640				1587	0	1583
Q Serve(g_s), s	2.2	12.4	0.0	21.7	11.9	11.9				1.5	0.0	2.1
Cycle Q Clear(g_c), s	2.2	12.4	0.0	21.7	11.9	11.9				1.5	0.0	2.1
Prop In Lane	1.00		1.00	1.00		0.09				1.00		0.30
Lane Grp Cap(c), veh/h	63	1696	607	597	2151	1163				81	0	81
V/C Ratio(X)	0.84	0.61	0.00	0.90	0.53	0.53				0.44	0.00	0.62
Avail Cap(c_a), veh/h	188	1786	640	999	2741	1481				411	0	410
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	32.2	17.2	0.0	19.9	4.6	4.6				31.1	0.0	31.4
Incr Delay (d2), s/veh	24.2	0.6	0.0	6.9	0.2	0.4				3.8	0.0	7.4
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	1.4	5.3	0.0	10.6	5.0	5.4				0.7	0.0	1.1
LnGrp Delay(d),s/veh	56.4	17.7	0.0	26.8	4.8	5.0				34.8	0.0	38.8
LnGrp LOS	E	B		C	A	A				C		D
Approach Vol, veh/h		1086			2302							86
Approach Delay, s/veh		19.6			10.0							37.1
Approach LOS		B			B							D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			29.9	29.7		8.0	7.2	52.4				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			42.5	26.5		17.5	8.0	61.0				
Max Q Clear Time (g_c+I1), s			23.7	14.4		4.1	4.2	13.9				
Green Ext Time (p_c), s			1.7	10.7		0.2	0.0	32.9				
Intersection Summary												
HCM 2010 Ctrl Delay			13.7									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound			West Bound				
Movement:	L	T	R		L	T	R		L	T	R	L	T	R		
Control:	Yield Sign				Yield Sign				Uncontrolled			Uncontrolled				
Rights:	Ignore				Ignore				Include			Include				
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	630		0	0	415		0	866	0	0	1449	0
Growth 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
Initial Bse:	0	0	630		0	0	415		0	866	0	0	1449	0
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.00		0.94	0.94	0.00		0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0		0	0	0		0	926	0	0	1550	0
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0	0
FinalVolume:	0	0	0		0	0	0		0	926	0	0	1550	0

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflct Vol:	xxxx	xxxx	309	xxxx	xxxx	xxxx	775	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	693	xxxx	xxxx	xxxx	345	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	693	xxxx	xxxx	xxxx	345	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx				xxxxxx				xxxxxx		
ApproachLOS:	*			*				*				*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound				South Bound				East Bound			West Bound		
Movement:	L	T	R		L	T	R		L	T	R	L	T	R
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled		
Rights:	Include				Include				Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	0	0	1139	357	0	1449	485
Growth 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	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	1139	357	0	1449	485
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.00	0.93	0.93	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	1221	0	0	1553	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	1221	0	0	1553	0

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx





















Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx	
ApproachLOS:	*				*				*				*	

Note: Queue reported is the number of cars per lane.

Existing 2016
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

MD Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	1090	0	0	1360	28	427	34	395	1	0	111
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.94	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1388	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1388	1346		1443	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	1198	0	0	1495	31	469	37	434	1	0	122
RTOR Reduction (vph)	0	0	0	0	3	0	0	26	212	0	114	0
Lane Group Flow (vph)	75	1198	0	0	1523	0	324	291	87	0	9	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	5.7	40.0			29.8		24.3	24.3	24.3		5.4	
Effective Green, g (s)	5.7	40.0			29.8		24.3	24.3	24.3		5.4	
Actuated g/C Ratio	0.07	0.48			0.36		0.29	0.29	0.29		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	108	2187			2047		439	405	393		93	
v/s Ratio Prot	0.05	c0.26			c0.27		c0.22	0.21			c0.01	
v/s Ratio Perm									0.06			
v/c Ratio	0.69	0.55			0.74		0.74	0.72	0.22		0.10	
Uniform Delay, d1	37.9	15.2			23.4		26.6	26.4	22.3		36.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	17.6	0.3			1.5		6.4	6.0	0.3		0.5	
Delay (s)	55.5	15.5			24.9		33.0	32.4	22.6		37.1	
Level of Service	E	B			C		C	C	C		D	
Approach Delay (s)		17.9			24.9			29.5			37.1	
Approach LOS		B			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			24.1				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			83.2			Sum of lost time (s)		18.0				
Intersection Capacity Utilization			63.4%			ICU Level of Service		B				
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.573
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Base Vol:	211	48	37	60	34	165	144	1121	222	43	1004	36
Growth 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
Initial Bse:	211	48	37	60	34	165	144	1121	222	43	1004	36
User 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
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	236	54	41	67	38	185	161	1254	248	48	1123	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	236	54	41	67	38	185	161	1254	248	48	1123	40
PCE 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
MLF 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
FinalVolume:	236	54	41	67	38	185	161	1254	248	48	1123	40

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	3400	1700	1700	1700	290	1410	1700	5100	1700	1700	4923	177

Capacity Analysis Module:

Vol/Sat:	0.07	0.03	0.02	0.04	0.13	0.13	0.09	0.25	0.15	0.03	0.23	0.23
Crit Moves:	****					****	****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.515
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	70	35	22	66	49	161	184	1023	49	43	838	81
Growth 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
Initial Bse:	70	35	22	66	49	161	184	1023	49	43	838	81
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	77	38	24	72	54	176	202	1120	54	47	918	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	38	24	72	54	176	202	1120	54	47	918	89
PCE 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
MLF 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
FinalVolume:	77	38	24	72	54	176	202	1120	54	47	918	89

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.86	0.14	1.00	2.74	0.26
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4867	233	1700	4650	450

Capacity Analysis Module:

Vol/Sat:	0.05	0.02	0.01	0.04	0.03	0.10	0.12	0.23	0.23	0.03	0.20	0.20
Crit Moves:	****					****	****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing 2016 Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.186
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	0	0	1	0

Volume Module:

Base Vol:	0	153	26	17	240	4	2	0	0	42	1	72
Growth 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
Initial Bse:	0	153	26	17	240	4	2	0	0	42	1	72
User 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
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	180	31	20	283	5	2	0	0	49	1	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	180	31	20	283	5	2	0	0	49	1	85
PCE 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
MLF 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
FinalVolume:	0	180	31	20	283	5	2	0	0	49	1	85

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.71	0.29	1.00	1.97	0.03	1.00	0.00	0.00	0.98	0.02	1.00
Final Sat.:	1700	2906	494	1700	3344	56	1700	0	0	1660	40	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.06	0.06	0.01	0.08	0.08	0.00	0.00	0.00	0.03	0.03	0.05
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	10	0	0	0	9	964	0	0	792	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	10	0	0	0	9	984	0	0	808	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1321	1813	407	1406	1815	492	813	0	0	984	0	0
Stage 1	811	811	-	1002	1002	-	-	-	-	-	-	-
Stage 2	510	1002	-	404	813	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	115	78	593	99	77	522	810	-	-	698	-	-
Stage 1	339	391	-	260	318	-	-	-	-	-	-	-
Stage 2	514	318	-	594	390	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	114	77	593	96	76	522	810	-	-	698	-	-
Mov Cap-2 Maneuver	114	77	-	96	76	-	-	-	-	-	-	-
Stage 1	335	391	-	257	314	-	-	-	-	-	-	-
Stage 2	508	314	-	584	390	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	0	0.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	810	-	-	349	-	698	-
HCM Lane V/C Ratio	0.011	-	-	0.035	-	-	-
HCM Control Delay (s)	9.5	-	-	15.7	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	0	60	0	0	0	7	962	0	0	796	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	61	0	0	0	7	972	0	0	804	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1317	1803	415	1308	1815	486	829	0	0	972	0	0
Stage 1	817	817	-	986	986	-	-	-	-	-	-	-
Stage 2	500	986	-	322	829	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	138	79	501	140	77	527	473	-	-	705	-	-
Stage 1	273	388	-	259	324	-	-	-	-	-	-	-
Stage 2	505	324	-	630	383	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	135	76	501	120	75	527	473	-	-	705	-	-
Mov Cap-2 Maneuver	210	193	-	201	190	-	-	-	-	-	-	-
Stage 1	264	388	-	251	314	-	-	-	-	-	-	-
Stage 2	489	314	-	554	383	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.2	0	0.3	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	473	-	-	501	-	705	-
HCM Lane V/C Ratio	0.015	-	-	0.121	-	-	-
HCM Control Delay (s)	12.7	0.2	-	13.2	0	0	-
HCM Lane LOS	B	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	54	44	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	59	48	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	107	48	48
Stage 1	48	-	-
Stage 2	59	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	891	1021	1559
Stage 1	974	-	-
Stage 2	964	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	891	1021	1559
Mov Cap-2 Maneuver	891	-	-
Stage 1	974	-	-
Stage 2	964	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1559	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	4.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	27	2	44	20	2	55	50	990	17	39	895	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	2	46	21	2	57	52	1031	18	41	932	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1650	2182	481	1599	2188	524	963	0	0	1049	0	0
Stage 1	1029	1029	-	1144	1144	-	-	-	-	-	-	-
Stage 2	621	1153	-	455	1044	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	82	45	454	89	45	498	408	-	-	659	-	-
Stage 1	194	309	-	208	273	-	-	-	-	-	-	-
Stage 2	428	270	-	523	304	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	60	37	454	66	37	498	408	-	-	659	-	-
Mov Cap-2 Maneuver	60	37	-	66	37	-	-	-	-	-	-	-
Stage 1	169	290	-	181	238	-	-	-	-	-	-	-
Stage 2	328	236	-	438	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	75.3	45.9	0.7	0.4
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	408	-	-	121	165	659	-	-
HCM Lane V/C Ratio	0.128	-	-	0.628	0.486	0.062	-	-
HCM Control Delay (s)	15.1	-	-	75.3	45.9	10.8	-	-
HCM Lane LOS	C	-	-	F	E	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	3.2	2.3	0.2	-	-

Appendix C – Cumulative Development Traffic Data

**CITY OF SANTA ANA Environmental Cumulative Development Project List
JUNE 2016**

Primary APN	Project	Address		Land Use	Res. Units	Square Feet	Status	On webpa	CP
198-101-07	9Max Capital Townhomes	1122	N Bewley St.	For-Rent Townhomes	12		Site Plan Review		AN
011-154-43	AMCAL First Street Family Apartments	1440	E First Street	Residential (rental)	69		Entitled 05/03/16		AP
398-278-05	Artist Gateway	117	S Sycamore St.	Livework	14		Site Plan Review	#9	VF
198-011-03	C & C Development North	1206	N Harbor Blvd.	Commerical		9,450	Under Construction	#15	AP
198-011-03	C & C Development North	1206	N Harbor Blvd.	Single Family Residences	95		Under Construction	#15	AP
198-011-04	C & C Development North	1206	N Harbor Blvd.	Livework	15		Under Construction	#15	AP
188-071-05	C & C Development South	520	S Harbor Blvd.	Single Family Residences	35		Entitled June 2015	#16	AP
198-162-02	Andalusia Apartments (C & C)	815	N Harbor Blvd.	Residential Apartments	70		Under Construction	#18	AP
398-191-02	Certified Transportation	628	E Washington Ave.	Bus Terminal Maintenance Building		7,165	Site Plan Review		HS
198-182-36	Charles Co. Apartments	421	N Harbor Blvd.	Residential Apartments	94		Site Plan Review	#20	AN
198-182-36	Charles Co. Apartments	421	N Harbor Blvd.	Commercial		9,900	Site Plan Review	#20	AN
198-061-03	City Venture: Magnolia Lane	4226	W Fifth St.	Single Family Residences	28		Entitled 4/1/2014		AN
108-722-50	City Ventures	1010	S Harbor Blvd.	Live/work & Res. Townhouse	78		Entitled 2015	#19	AN
198-043-16	City Ventures Residential Townhomes	1406	N Harbor Boulevard	Residential (townhomes)	38		Plan check		AP
198-071-34	Christ Our Savior Parcel Map	2000	W Alton Ave	Parcel Subdivision for Vacant Land	0		Site Plan Review		VF
398-202-01	Depot at Santiago	923	N Santiago	Residential Apartments	70		Entitled 6/2014	#8	VC
398-202-01	Depot at Santiago	923	N Santiago	Mixed Use (Retail/Office)		9,000	Entitled 6/2014	#4	VC
402-181-11	East First Street Apartments - AMG & Associates	2222	E First St.	Senior Housing	443		Site Plan Review		AP
400-091-14	First Street Care Home	2151	E First St	Convert 75 Room Motel to Supportive Housing	72		Site Plan Review		AN
407-107-23	Hapham Housing	3025	W Edinger Ave.	Townhomes	18		Site Plan Review		AN
396-321-21	Homeplace Center Expansion	1975	E Seventeenth St.	Commerical		9,500	Site Plan Review		AP
411-074-03	Legado at the Met	200	E First American Way	Residential Condo (rental)	284		Entitled May 2015		VC
198-261-26	Live/Work Lofts	3218	W Fifth St.	Residential Condo	6		Site Plan Review		HS
398-152-16	Lotus Townhomes	627	E Washington Ave.	Residential Townhomes	8		Entitled October 2014		VF
400-081-08	Lyon Commercial	1907	E First St.	Commercial		2,424	Under Construction	#6	VF
400-081-08	Lyon Communities	1901	E First St.	Residential Apartments	254		Under Construction	#6	VF
005-153-19	Meta Housing Adaptive Reuse Residential	1666	N Main St.	Residential Apartments	58		Entitled 05/09/2016		AP
007-110-06	OC Food Barn	2210	W Fifth St.	Commercial Kitchen		5,450	Site Plan Review		RS
007-320-04	Olson Residential	1506	W Frist Street	Townhomes	62		Entitled 06/2016		VF
108-591-68	Park Estates: City Venture	1030	S Euclid Ave.	Single Family Residences	17		Entitled 2014		AN
041-213-04	Park View at Town and Country Manor	555	E Memory Ln.	Residential Apartments	174		Entitled 6/2014		VF
410-462-19	Red Mountain Bristol Shops Expansion	3005	S Bristol St.	Commercial		5,027	Site Plan Review		IO
396-031-16	Rocket Express Car Wash	1703	E Seventeenth Street	Car wash		4,995	Site Plan Review		AN
396-031-16	Rocket Express Car Wash	1703	E Seventeenth Street	Demolishe Existing Commercial		-20,146	Site Plan Review		AN
108-073-14	Saigon Reformed Presbyterian	5321	W Mcfadden Avenue	Saigon Reformed Presbyterian		6,000	Site Plan Review		VF
396-052-14	Sexlinger Homes and Orchard	1584	E Santa Clara Ave.	Single Family Residence	24		In Litigation	#11	VF
140-061-94	Shea Homes	2001	W MacArthur Blvd.	Single Family Residence	42		Site Plan Review		VF
411-081-28	Skyline Phase II	10	E Hutton Centre	Residential Condo	150		Entitled Sept 2005		VF
041-215-03	The 301	301	E Jeanette Ln.	MF Residential	182		Plan check	#3	VC
399-031-23	The Academy Charter High School	1901	N Fairview St.	"Family" Apartments	8		Under Construction	#14	VF
399-031-23	The Academy Charter High School	1901	N Fairview St.	Educational (high school)		110,500	Under Construction	#14	VF
430-221-13	The Heritage	2001	E Dyer Rd.	Residential Condo (rental)	1221		Entitled 3/2016		VF
198-081-27	The Line	3630	Westminster Ave.	Commercial		4,000	Plan check	#21	HS
198-081-27	The Line	3630	Westminster Ave.	Residential Apartments	228		Plan check	#21	HS
400-071-03	The Madison Mixed-Use Commercial	200	N Cabrillo Park Drive	Residential Apartments	213		Entitled April 2015	#5	VC
400-071-03	The Madison Mixed-Use Commercial	200	N Cabrillo Park Drive	Live/Work	4		Entitled April 2015	#5	VC
400-071-03	The Madison Mixed-Use Commercial	200	N Cabrillo Park Drive	Commercial		6,325	Entitled April 2015		VC
411-074-03	The Met Development	200	E First American Way	Multi-Family Residential	278		Site Plan Review		JA
398-541-13	The Orleans Adpative Reuse Apartments	1212	N Broadway Ave.	Residential Apartments	24		Site Plan Review		AN
398-484-05	The Salvation Army	818	E Third Street	Expansion of Emergency Shelter (net)		18,772	Under Construction		MM
398-471-03	Tom's Trucks Residential Development	1008	E Fourth St.	Single Family Residence	170		Site Plan Review		VF
398-254-01	Tancredi-Chalan Adpative Reuse	511	N Sycamore St.	Mixed-Use Commercial/Residential	40		Site Plan Review		AP
198-281-25	West Fifth Villas	3417	W Fifth St.	Residential Condo	8		Site Plan Review		AP
398-591-02	West End Lofts	320	W Fourth St.	Livework	4		Plan Check		HS
405-214-04	Villas de Rosa Subdivision	1102	N King St.	Single-Family Residence	5		Site Plan Review		AP
398-101-03	Train Station Live/ Work	930	N Grand Ave.		5		Site Plan Review		JA

**Table C-1
Trip Generation Rates**

Trip Rates													
Project				Daily	Weekday AM Peak			Weekday PM Peak			Saturday Mid-Day		
No.	Land Use	Code ¹	Unit ²		Total	In%	Out%	Total	In%	Out%	Total	In%	Out%
1	Utilities	ITE 170	TSF	25.00	0.80	63%	37%	0.76	45%	55%	0.80	50%	50%
2	Single-Family Detached Housing	ITE 210	DU	9.52	0.75	25%	75%	1.00	63%	37%	0.93	54%	46%
3	Apartments	ITE 220	DU	6.65	0.51	20%	80%	0.62	65%	35%	0.52	65%	35%
4	Condominium / Townhouse	ITE 230	DU	5.81	0.44	17%	83%	0.52	67%	33%	0.47	54%	46%
	Mobile Home Park	ITE 240	ODU	4.99	0.44	20%	80%				0.59	62%	38%
5	Senior Adult Housing - Detached	ITE 251	DU	3.68	0.22	35%	65%	0.27	61%	39%	0.23	48%	52%
6	Senior Adult Housing - Attached	ITE 252	DU	3.44	0.20	34%	66%	0.25	54%	46%	0.31	57%	43%
7	Congregate Care Facility	ITE 253	ODU	2.15	0.06	61%	39%	0.17	56%	44%	0.17	56%	44%
8	Hotel	ITE 310	ORM	8.92	0.67	58%	42%	0.70	49%	51%	0.87	56%	44%
9	Church	ITE 560	TSF	9.11	0.56	62%	38%	0.55	48%	52%	3.54	71%	29%
10	General Office	ITE 710	TSF	11.03	1.56	88%	12%	1.49	17%	83%	0.43	54%	46%
11	Shopping Center	ITE 820	TSF	42.70	0.96	62%	38%	3.71	48%	52%	4.82	52%	48%
12	Automobile Care Center	ITE 942	TSF	23.72	2.25	66%	34%	3.11	48%	52%	2.83	56%	44%
13	Car Wash	ITE 948	TSF	190.62	14.12	50%	50%	14.12	50%	50%	14.12	50%	50%

**Table C-2
Cumulative Development Traffic Generation Summary**

Traffic Generation												
Project			Daily	Weekday AM Peak			Weekday PM Peak			Saturday Mid-Day		
No.	Land Use	Quantity ²		Total	In	Out	Total	In	Out	Total	In	Out
1	Apartments	69 DU	459	35	7	28	43	28	15	35	23	12
2	Utilities	7.165 TSF	179	6	4	2	5	2	3	6	3	3
3	Apartments	70 DU	466	36	7	29	43	28	15	37	24	13
	Shopping Center	9.000 TSF	384	8	5	3	33	16	17	44	23	21
	Pass-By Trips ³	30%	-115	-3	-2	-1	-10	-5	-5	-13	-7	-6
Subtotal Trips			735	41	10	31	66	39	27	68	40	28
4	Senior Adult Housing - Attached	443 DU	1,524	89	31	58	115	62	53	138	80	58
5	Congregate Care Facility	72 ODU	155	4	3	1	12	7	5	12	7	5
6	Shopping Center	9.500 TSF	406	9	6	3	35	17	18	46	24	22
7	Condominium / Townhouse	8 DU	46	4	1	3	4	3	1	4	2	2
8	Shopping Center	2.424 TSF	104	2	1	1	9	4	5	12	6	6
	Pass-By Trips ³	30%	-31	-	-	-	-3	-1	-2	-4	-2	-2
	Apartments	254 DU	1,689	129	25	104	158	102	56	132	86	46
Subtotal Trips			1,762	131	26	105	164	105	59	140	90	50
9	Apartments	58 DU	386	30	6	24	36	23	13	30	20	10
10	Apartments	174 DU	1,157	88	17	71	108	70	38	90	59	31
11	Car Wash	4.995 TSF	952	70	35	35	70	35	35	70	35	35
12	Single-Family Detached Housing	24 DU	228	18	5	13	24	15	9	22	12	10
13	Condominium / Townhouse	182 DU	1,057	80	13	67	95	64	31	86	46	40
14	Apartments	213 DU	1,416	108	21	87	132	85	47	110	72	38
	Condominium / Townhouse	4 DU	23	1	-	1	2	1	1	2	1	1
	Shopping Center	6.325 TSF	270	6	4	2	23	11	12	31	16	15
	Pass-By Trips ³	30%	-81	-2	-1	-1	-7	-3	-4	-10	-5	-5
Subtotal Trips			1,628	113	24	89	150	94	56	133	84	49
15	Church	18.772 TSF	171	11	7	4	10	5	5	66	47	19
16	Single-Family Detached Housing	170 DU	1,618	127	32	95	170	107	63	158	85	73
17	Condominium / Townhouse	5 DU	29	2	-	2	3	2	1	2	1	1
Total Cumulative Trips			12,492	858	227	631	1,110	678	432	1,106	658	448

Note

- ¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 9th Edition, 2012
- ² DU = Dwelling Units; TSF = Thousand Square Feet; ODU = Occupied Dwelling Units; ORM = Occupied Rooms
- ³ AM Pass-By Trips: ITE, *Trip Generation Manual*, 9th Edition, Table 5.23 Pass-By Trips and Diverted Linked Trips, Weekday, AM Peak Period, Fast-Food Restaurant with Drive-Through Window, Average Pass-By Trip Percentage = 49%.
PM and Daily Pass-By Trips: ITE, *Trip Generation Manual*, 9th Edition, Table 5.24 Pass-By Trips and Diverted Linked Trips, Weekday, PM Peak Period, Fast-Food Restaurant with Drive-Through Window, Average Pass-By Trip Percentage = 50%.
To be conservative, a 30% pass-by reduction factor is utilized even though ITE shows a higher rate.

13
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15

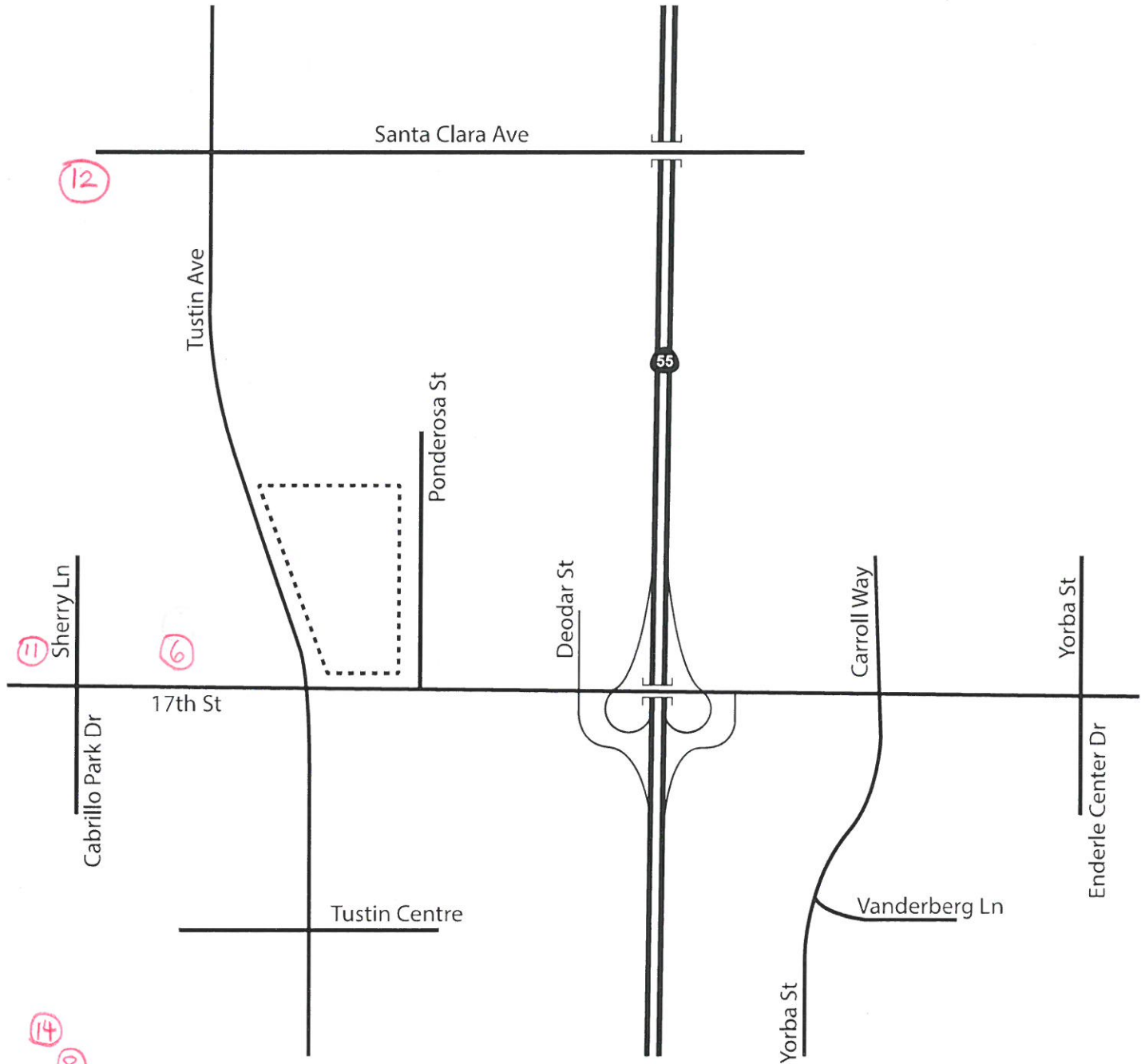
14

8

1

5

4



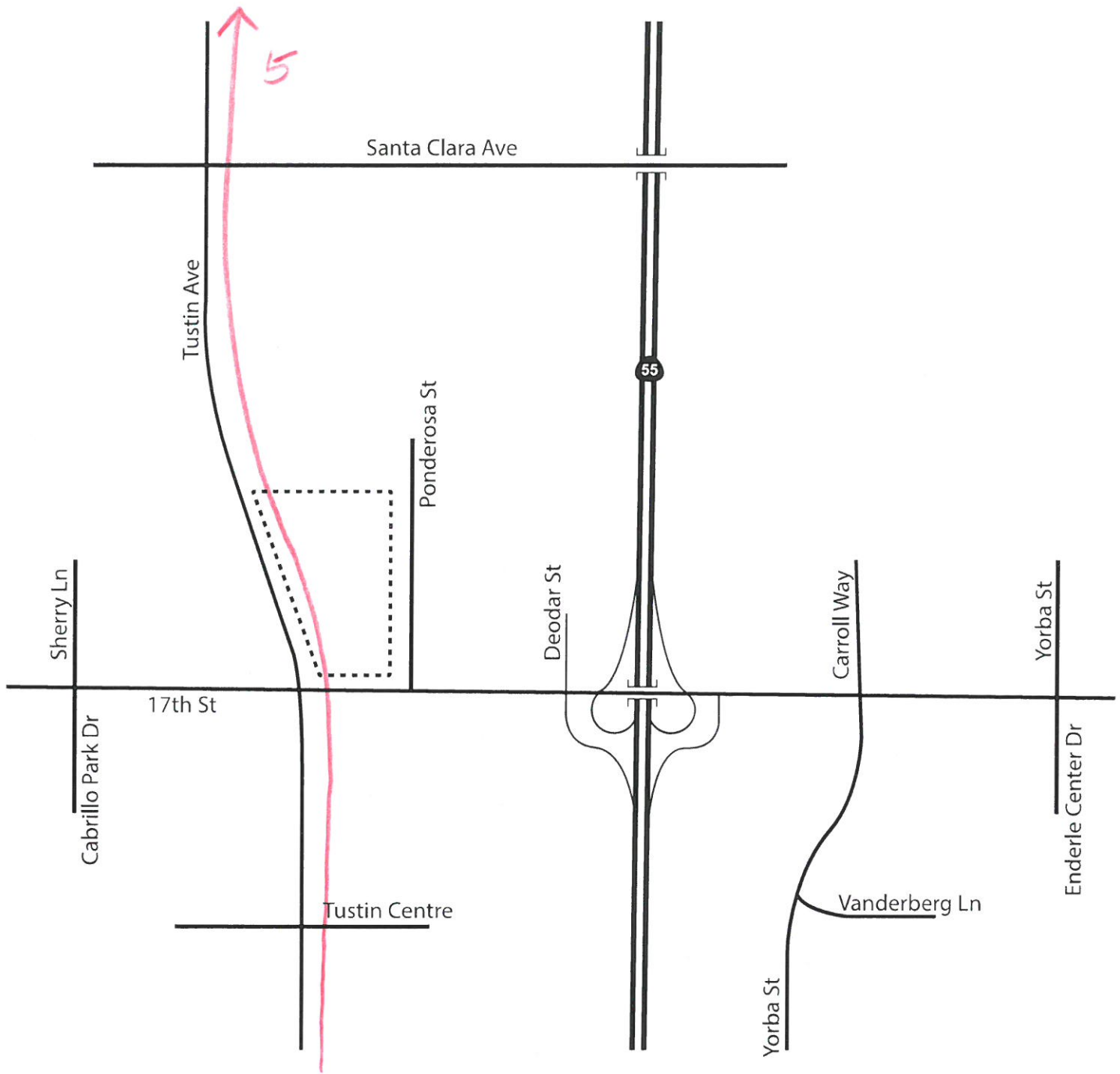
Cumulative Development Location Map



Not to Scale

Michael Baker
INTERNATIONAL

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Traffic Impact Analysis



⑬
⑮

①

Cumulative Development ①⑮⑬
Trip Distribution

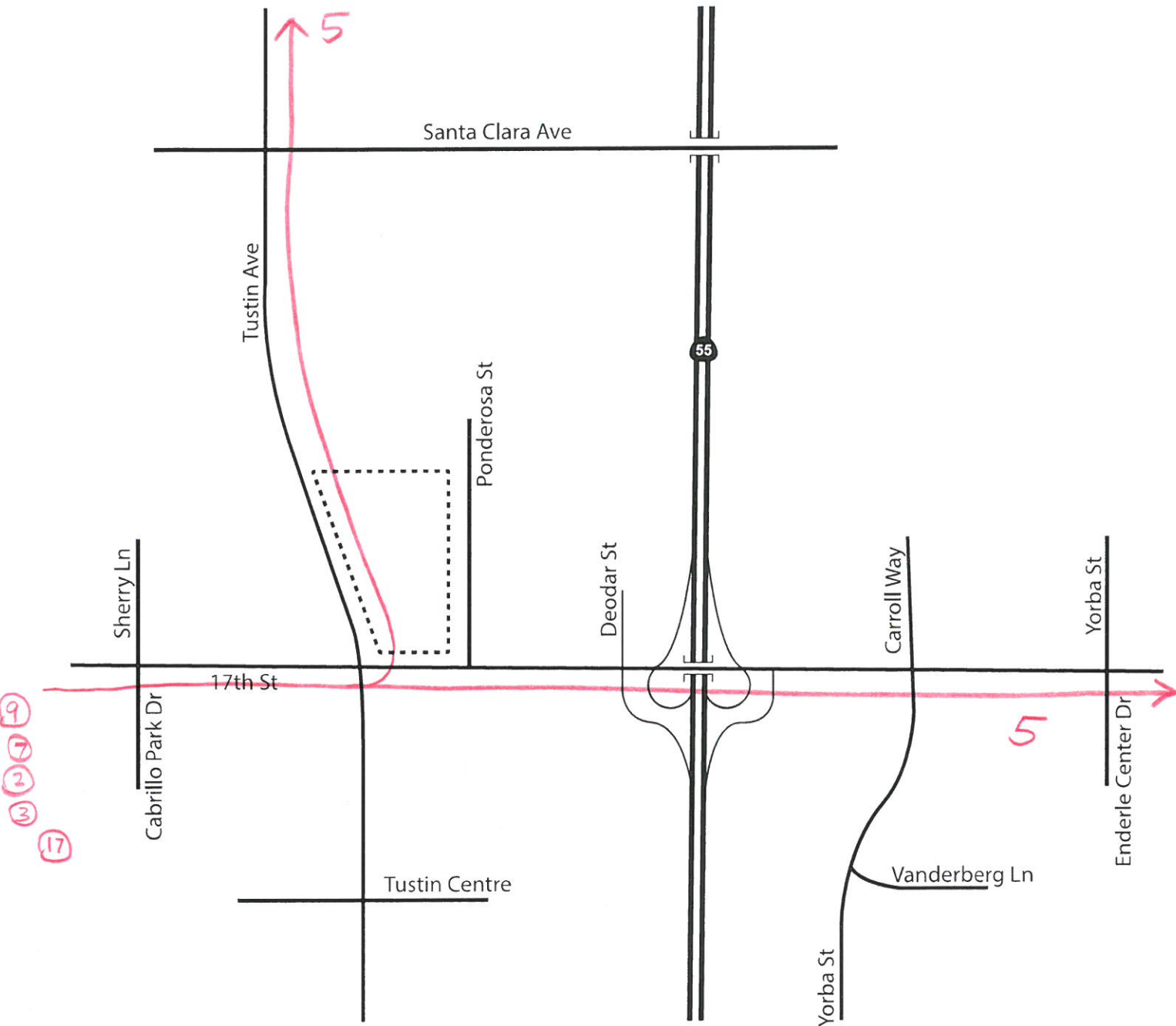


Not to Scale

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INTERNATIONAL

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Traffic Impact Analysis

TAZ #3



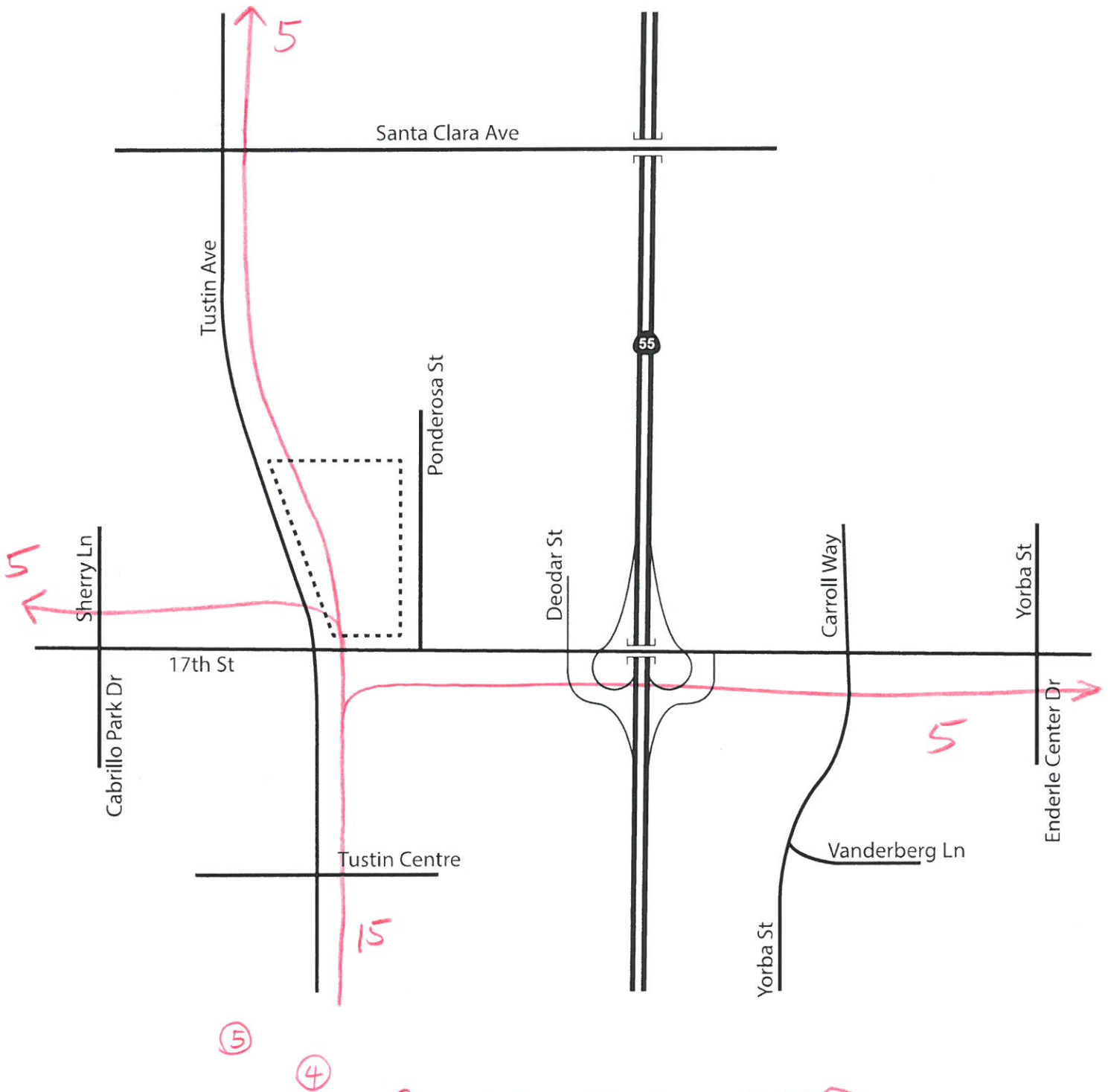
Cumulative Development 2 3 7 9 17
 Trip Distribution



Not to Scale

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Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Traffic Impact Analysis



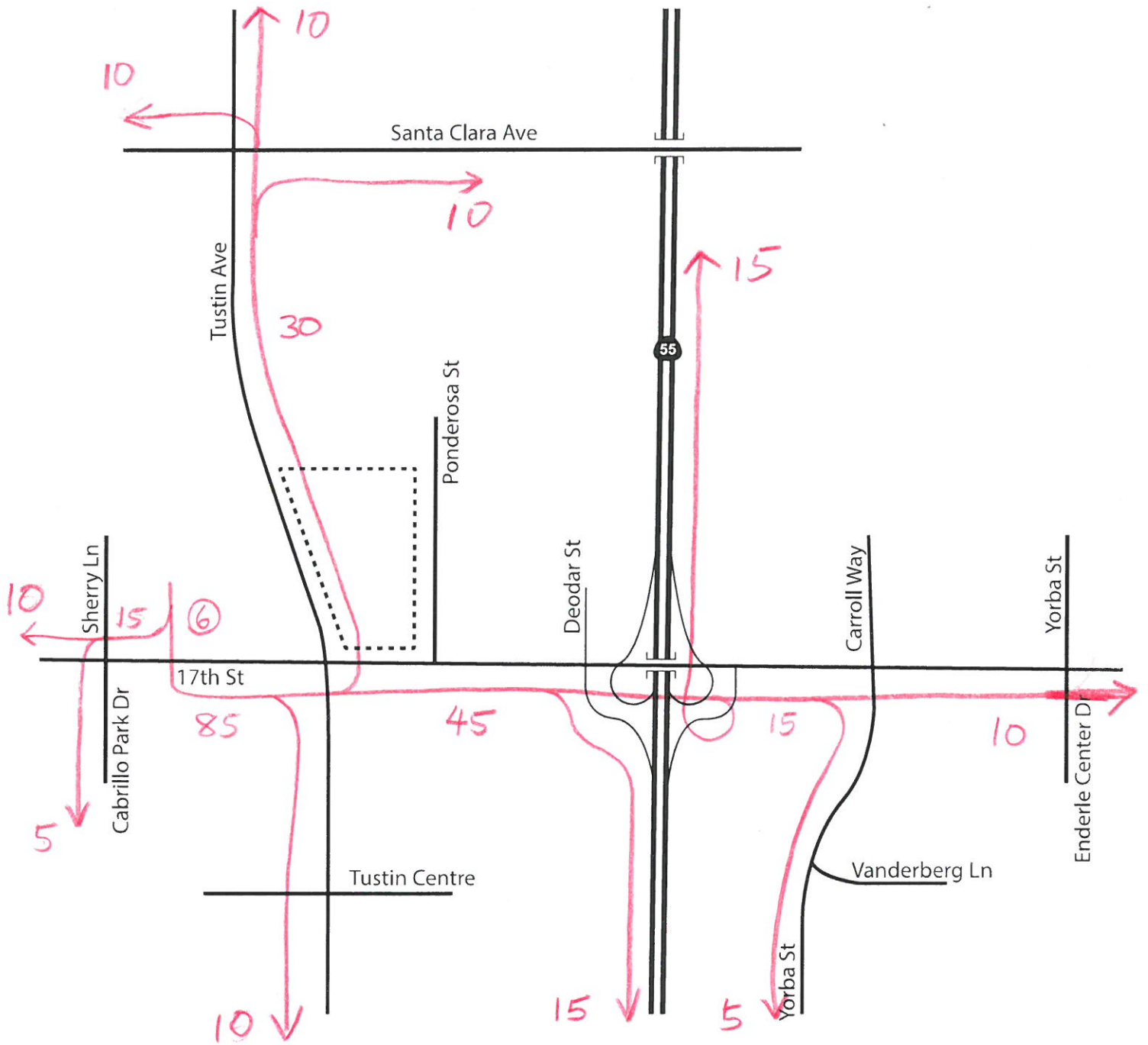
Cumulative Development (4)(5)
 Trip Distribution



Not to Scale

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 INTERNATIONAL

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Traffic Impact Analysis



Cumulative Development ⑥

Trip Distribution

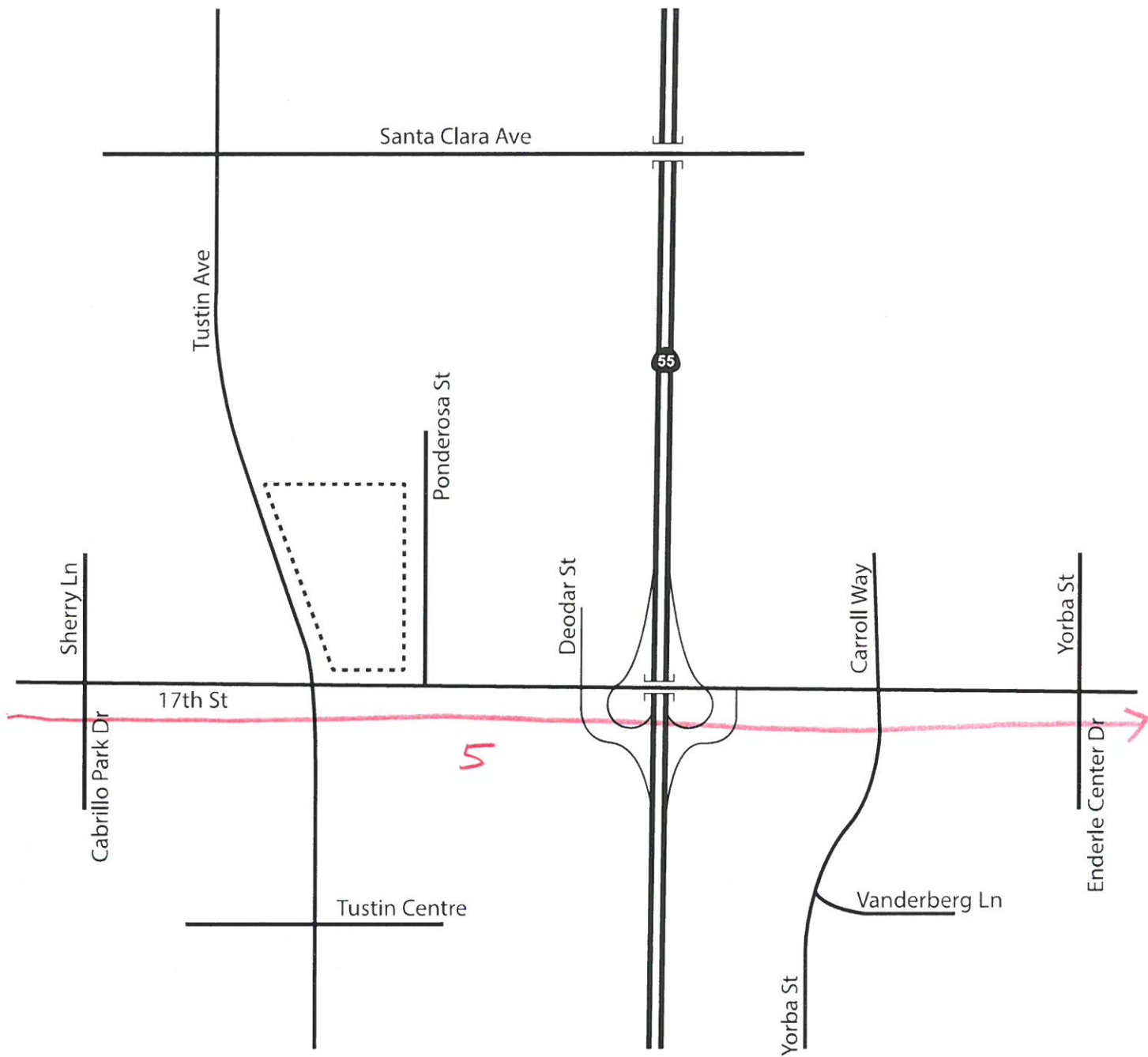


Not to Scale

Michael Baker
INTERNATIONAL

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Traffic Impact Analysis

13
10



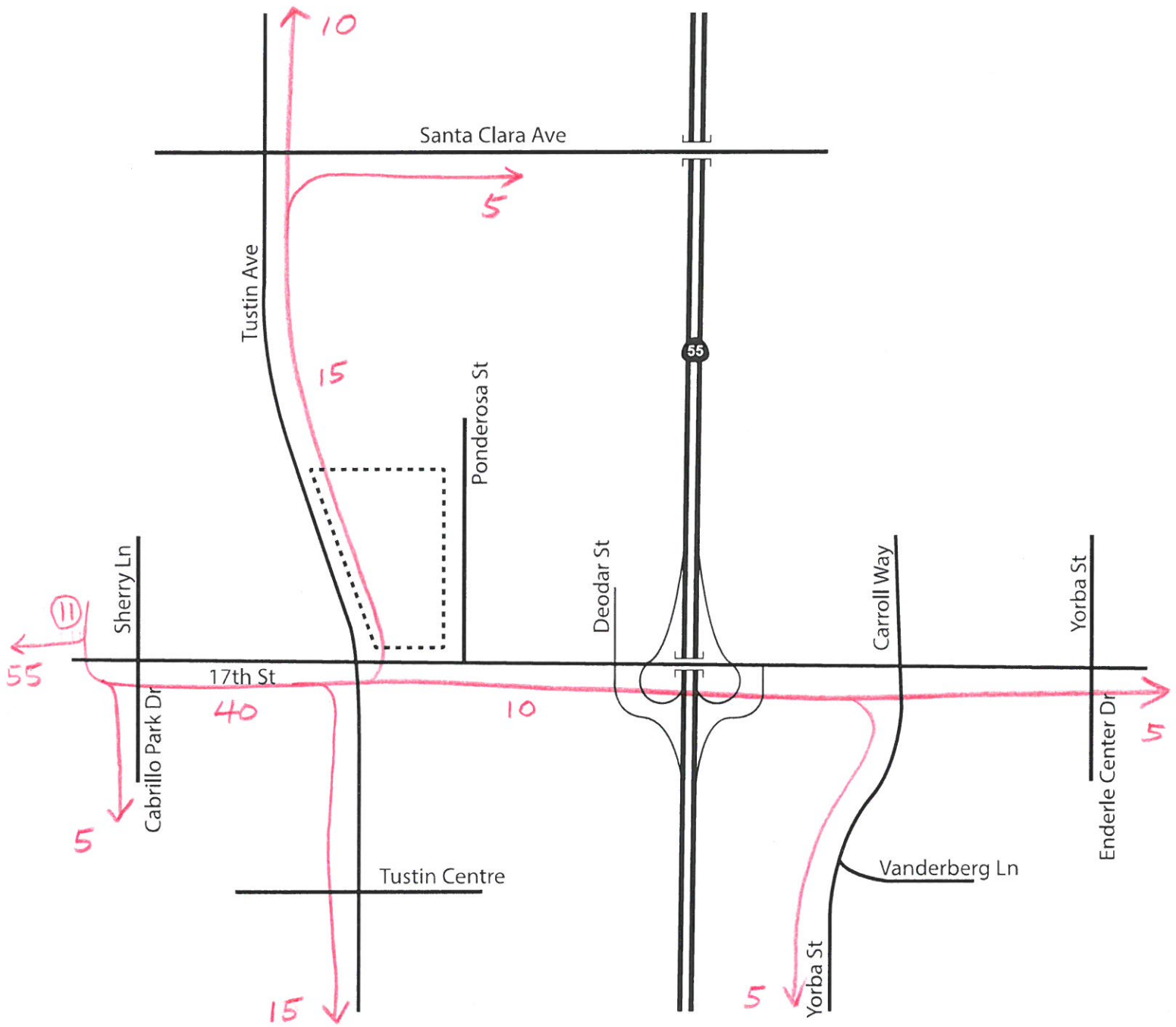
Cumulative Development 10 13
Trip Distribution



Not to Scale

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INTERNATIONAL

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Traffic Impact Analysis

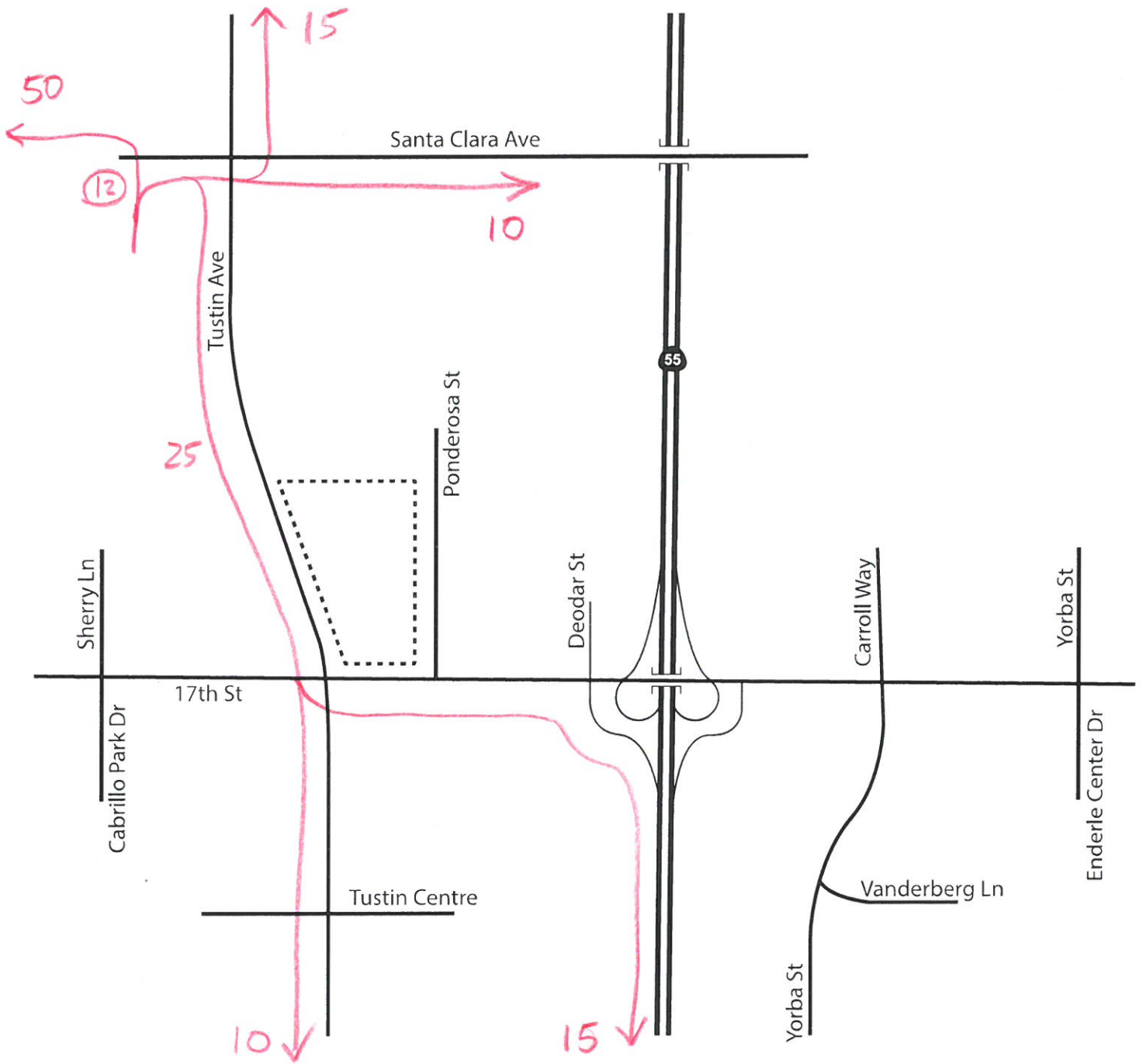


Cumulative Development ⑪

Trip Distribution



Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Traffic Impact Analysis



Cumulative Development (12)

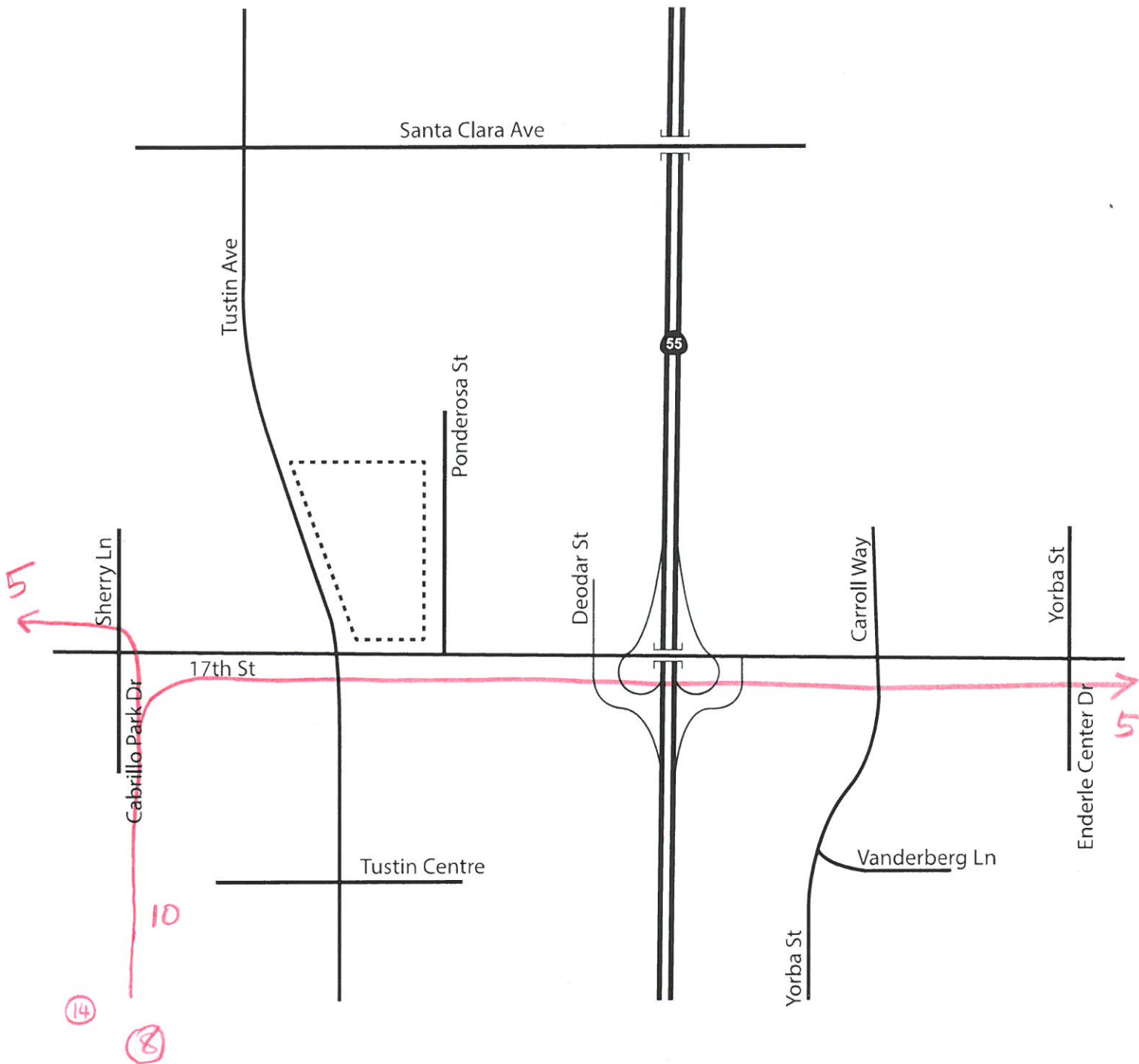
Trip Distribution



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Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Traffic Impact Analysis



Cumulative Development (8) (14)
 Trip Distribution



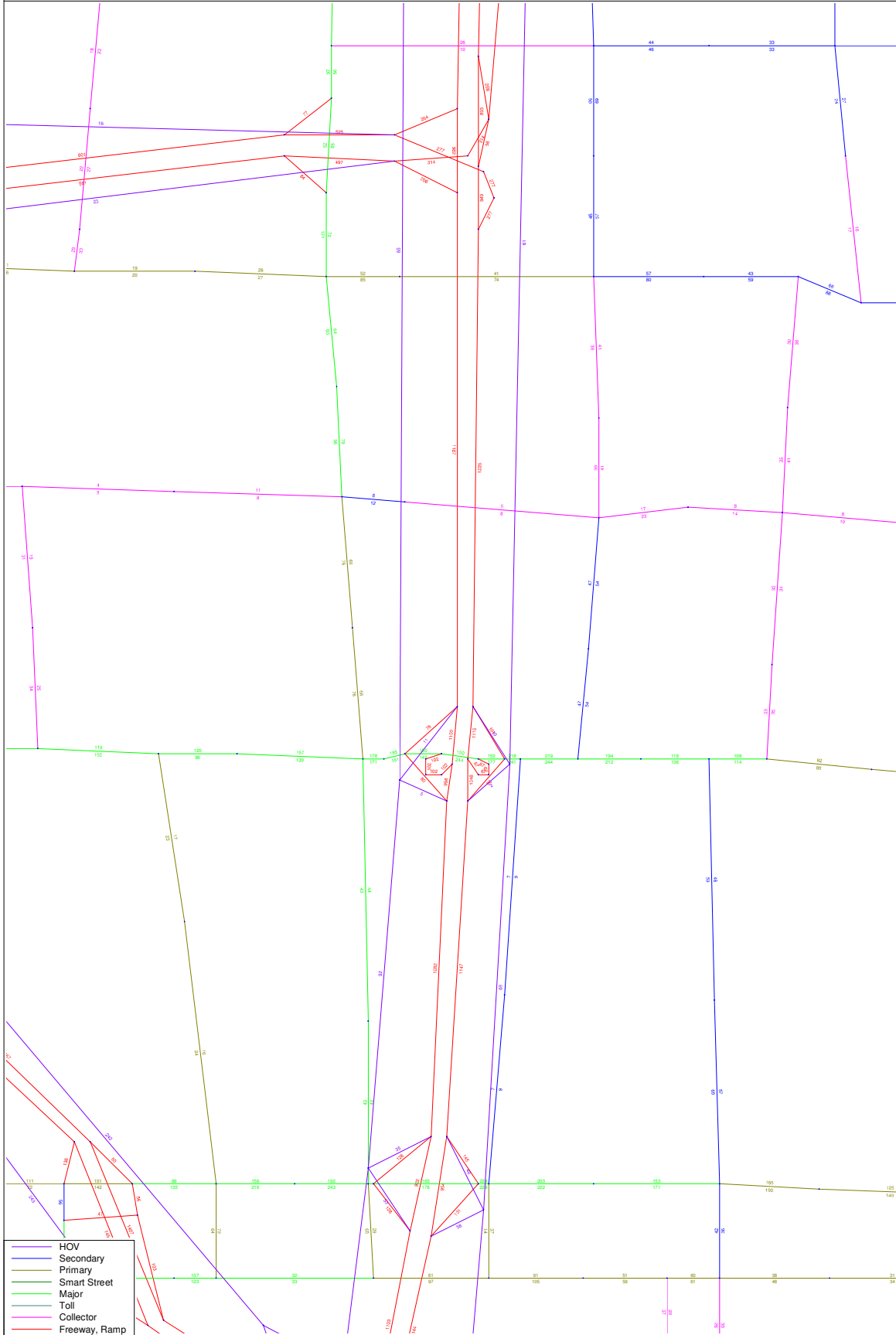
Not to Scale

Michael Baker
 INTERNATIONAL

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Traffic Impact Analysis

Appendix D – Traffic Model Forecast Data

**OCTAM3.4.1 - 2010 Baseline
Raw Model Volumes
ADT - (In 100's)
NOT FOR DISTRIBUTION OR DIRECT ANALYSIS**

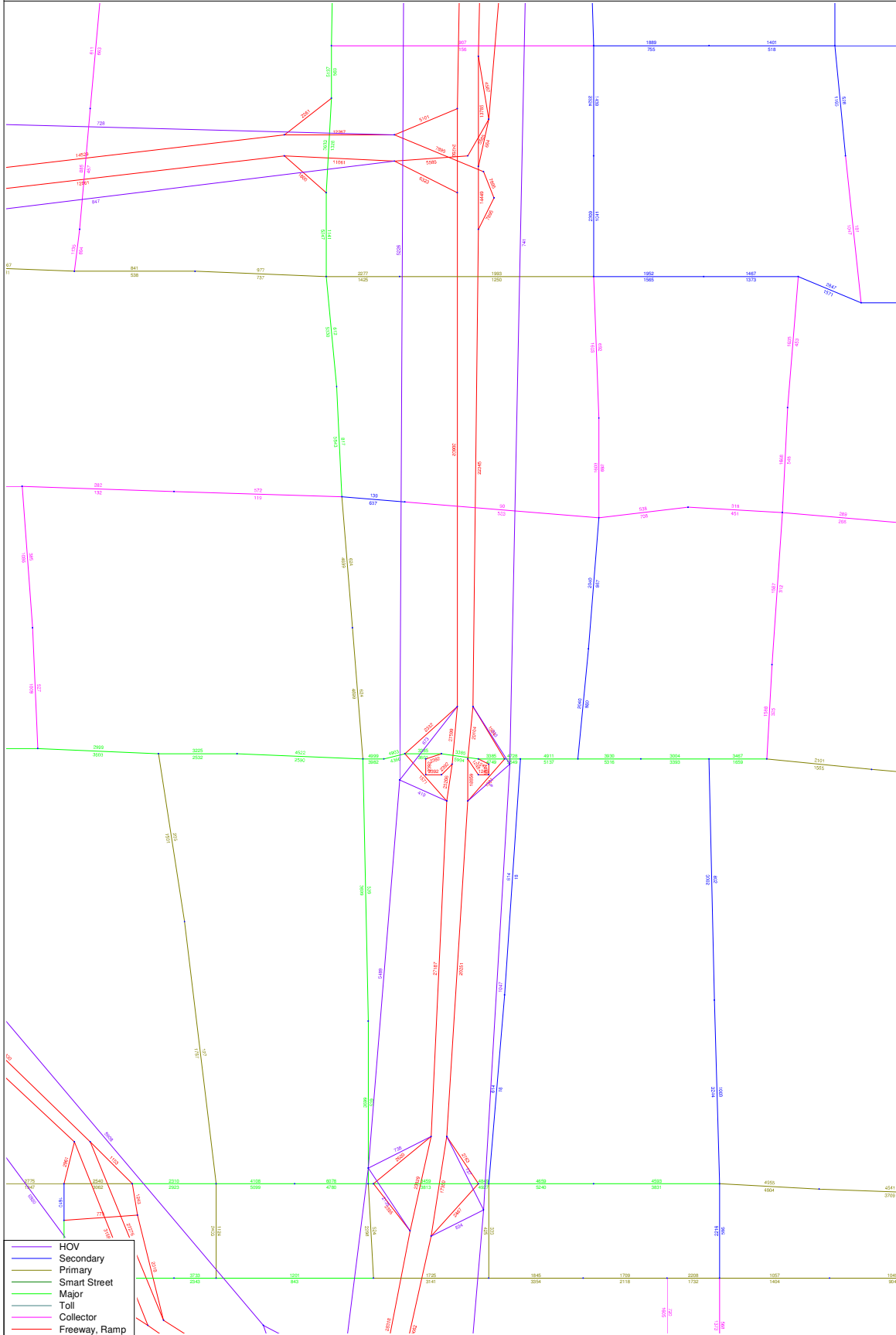


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6/21/2016

Viper Software by The Urban Analysis Group

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**OCTAM3.4.1 - 2010 Baseline
Raw Model Volumes
AM Peak Period
NOT FOR DISTRIBUTION OR DIRECT ANALYSIS**



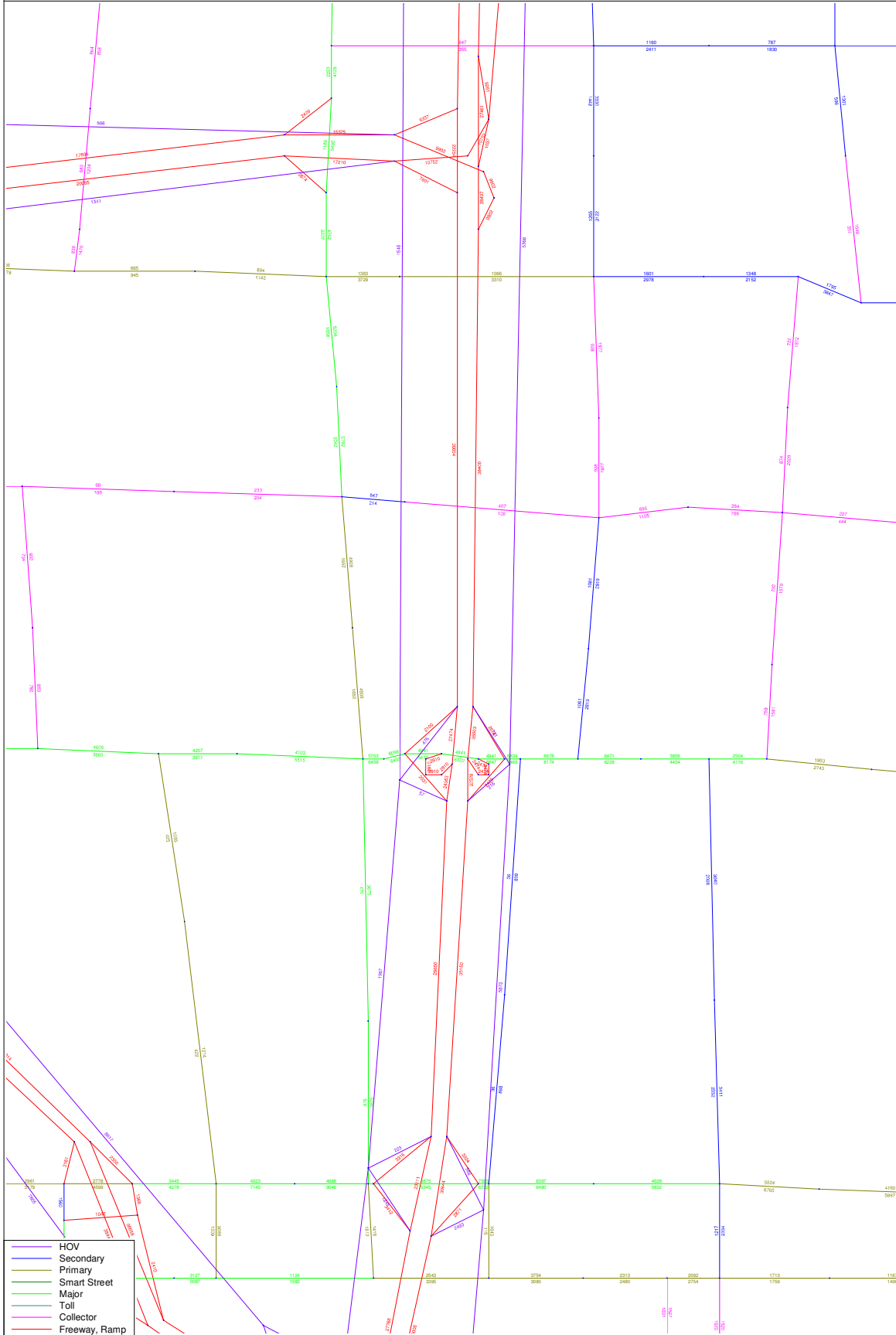
- HOV
- Secondary
- Primary
- Smart Street
- Major
- Toll
- Collector
- Freeway_Ramp

O:\OCTAM-U\OCTAM3.4.1\2010\041013\imrun-051316\oct34.y10.ama.051316
6/21/2016

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**OCTAM3.4.1 - 2010 Baseline
Raw Model Volumes
PM Peak Period
NOT FOR DISTRIBUTION OR DIRECT ANALYSIS**

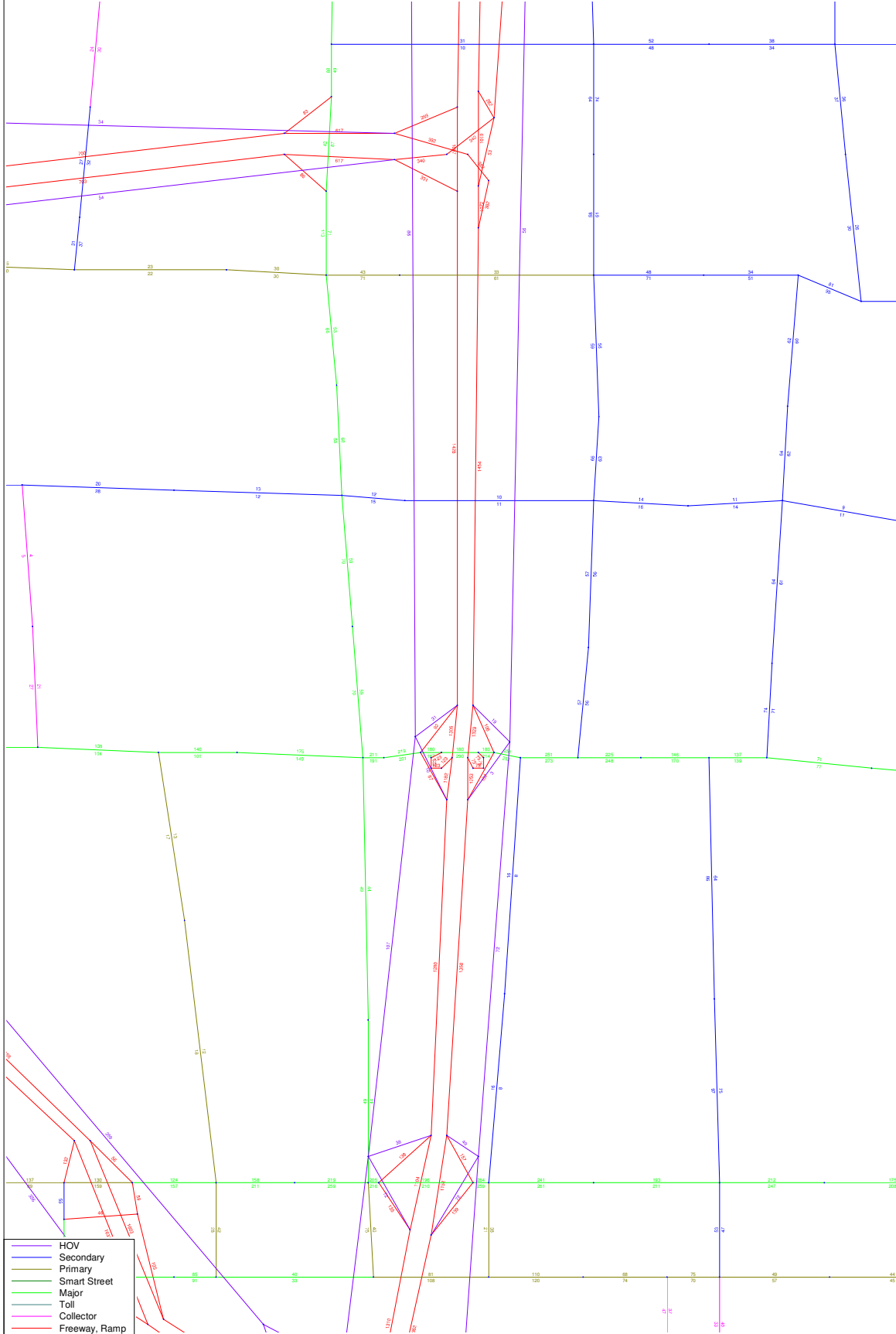


O:\OCTAM-U\OCTAM3.4.1\2010\041013\imrun-051316\oct34.y10.pma.051316
6/21/2016

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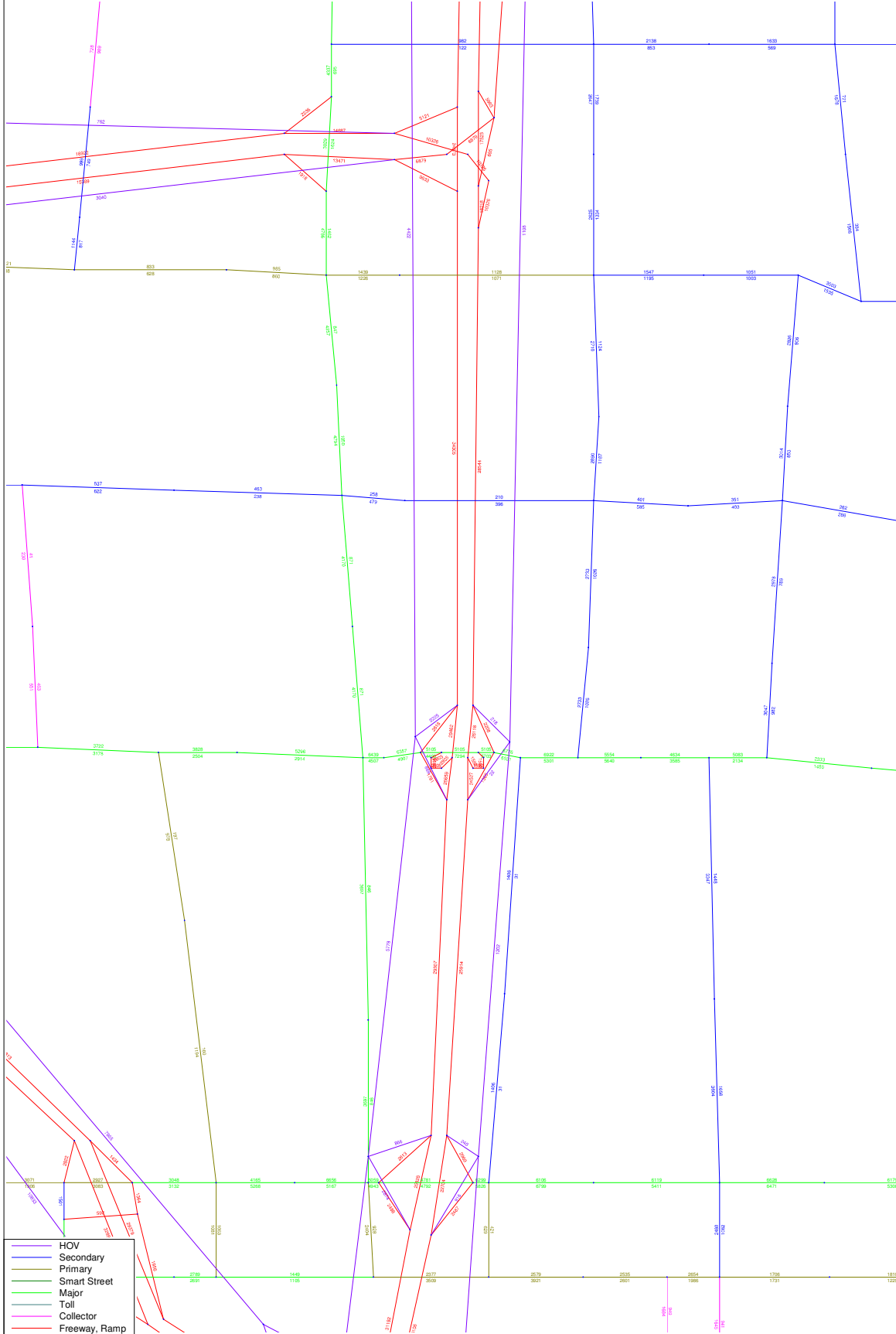
OCTAM3.4.1 - 2035 MPAH Buildout
Raw Model Volumes
ADT - (In 100's)
NOT FOR DISTRIBUTION OR DIRECT ANALYSIS



O:\OCTAM-U\OCTAM3.4.1\2035\031015-MPAH\mrun-051316\oc134.y35.adt.051316
 6/21/2016
 Viper Software by The Urban Analysis Group

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**OCTAM3.4.1 - 2035 MPAH Buildout
Raw Model Volumes
AM Peak Period
NOT FOR DISTRIBUTION OR DIRECT ANALYSIS**

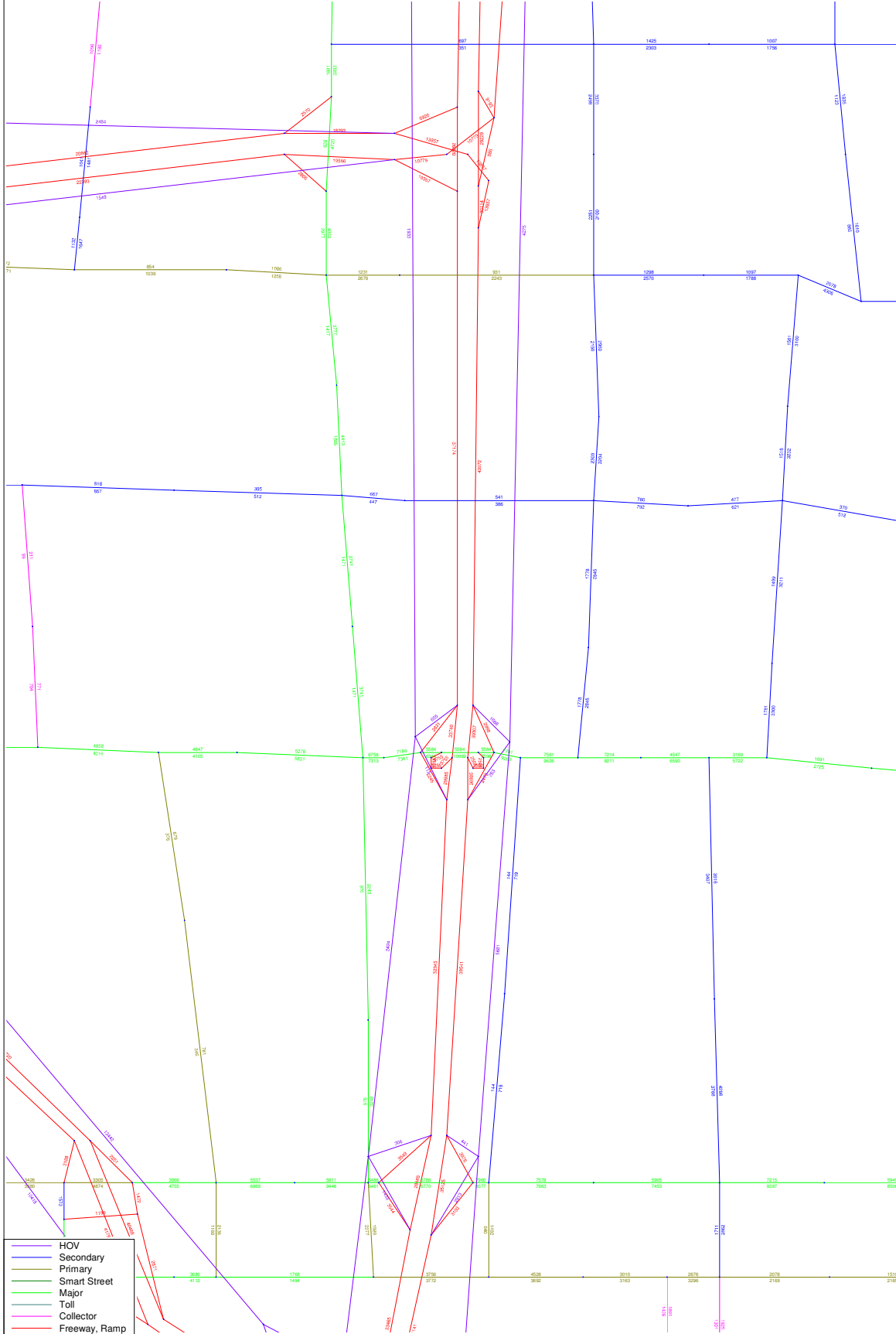


- HOV
- Secondary
- Primary
- Smart Street
- Major
- Toll
- Collector
- Freeway_Ramp

O:\OCTAM-U\OCTAM3.4.1\2035\031015-MPAH\mrun-051316\oc134.y35.ama.051316
6/21/2016
Viper Software by The Urban Analysis Group

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**OCTAM3.4.1 - 2035 MPAH Buildout
Raw Model Volumes
PM Peak Period
NOT FOR DISTRIBUTION OR DIRECT ANALYSIS**



- HOV
- Secondary
- Primary
- Smart Street
- Major
- Toll
- Collector
- Freeway_Ramp

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6/21/2016
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Appendix E – Future Forecast Post-Process Data Sheets

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at Santa Clara Ave Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				93	2600	112	
2518	678			SR	ST	SL	
327		456		EL		WR	109
608		462		ET		WT	202
2754	640			ER		WL	112
				NL	NT	NR	
In - Out	4221	4221	0	62	405	105	

				RowTt	Target	2	2	2	To E	To W	
From N	0	2600	112	93	2805	2518	0	2334	101	83	
From S	405	0	105	62	572	639.85	453	0	117	69	
From E	109	112	0	202	423	455.56	117	121	0	218	
From W	100	187	288	0	575	607.56	106	198	304	0	
	To N	To S	To E	To W			ColTot	676	2652	522	370
							Target	678	2754	462	327
				RowTt	Target	To N	To S	To E	To W		
From N	0	2424	89	74	2586	2518	0	2360	87	72	
From S	454	0	104	61	619	640	469	0	107	63	
From E	118	125	0	192	435	456	123	131	0	201	
From W	106	205	269	0	580	608	111	215	282	0	
	To N	To S	To E	To W			ColTot	703	2706	476	336
							Target	678	2754	462	327
				RowTt	Target	To N	To S	To E	To W		
From N	0	2402	84	70	2556	2518	0	2366	83	69	
From S	452	0	104	62	618	640	468	0	108	64	
From E	119	134	0	196	448	456	121	136	0	199	
From W	107	219	274	0	599	608	108	222	277	0	
	To N	To S	To E	To W			ColTot	697	2724	468	332
							Target	678	2754	462	327
				RowTt	Target	To N	To S	To E	To W		
From N	0	2393	82	68	2542	2518	0	2370	81	67	
From S	455	0	106	63	624	640	466	0	109	64	
From E	117	137	0	196	451	456	119	139	0	198	
From W	105	224	274	0	603	608	106	226	276	0	
	To N	To S	To E	To W			ColTot	691	2734	466	330
							Target	678	2754	462	327
							Pct	1.01945	0.9928	1.0082	1.00884

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	62	405	105	112	2600	93	100	288	187	112	202	109
2035	64	466	109	81	2370	67	106	276	226	139	198	119
2035 w 10%												
Min Growth	68	466	116	123	2,860	102	110	317	226	139	222	120
2035 Roundec	70	470	120	120	2,860	100	110	320	230	140	220	120
2035 Adjusted	70	470	120	120	2,860	100	110	320	230	140	220	120

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at 17th St Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				20	1769	549	
2193	643			SR	ST	SL	
1097		1901		EL		WR	206
1074		1575		ET		WT	760
2441	587			ER		WL	541
				NL	NT	NR	
In - Out	5755	5755	-1	105	189	209	

					RowTt	Target	2	2	2	To E	To W	
From N	0	1769	549	20	2338	2193.3				1659	515	19
From S	189	0	209	105	503	587				221	0	244
From E	206	541	0	760	1507	1901				260	682	0
From W	180	132	673	0	985	1073.6				196	144	734
	To N	To S	To E	To W			ColTot	677	2486	1492	1100	
							Target	643	2441	1575	1097	
					RowTt	Target	To N	To S	To E	To W		
From N	0	1630	543	19	2192	2193	0	1631	544	19		
From S	209	0	257	122	589	587	209	0	256	122		
From E	247	670	0	956	1873	1901	250	680	0	970		
From W	186	141	774	0	1102	1074	182	138	754	0		
	To N	To S	To E	To W			ColTot	641	2449	1554	1111	
							Target	643	2441	1575	1097	
					RowTt	Target	To N	To S	To E	To W		
From N	0	1626	551	18	2195	2193	0	1625	550	18		
From S	209	0	260	120	589	587	208	0	259	120		
From E	251	678	0	958	1887	1901	253	683	0	965		
From W	182	137	764	0	1084	1074	180	136	757	0		
	To N	To S	To E	To W			ColTot	642	2444	1566	1103	
							Target	643	2441	1575	1097	
					RowTt	Target	To N	To S	To E	To W		
From N	0	1623	553	18	2195	2193	0	1622	553	18		
From S	209	0	260	119	588	587	208	0	260	119		
From E	253	682	0	959	1895	1901	254	685	0	962		
From W	181	136	761	0	1078	1074	180	135	758	0		
	To N	To S	To E	To W			ColTot	642	2442	1571	1100	
							Target	643	2441	1575	1097	
							Pct	0.99963	1.0002	0.9976	1.00255	

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	105	189	209	549	1769	20	180	673	132	541	760	206
2035	119	208	260	553	1622	18	180	758	135	685	962	254
2035 w 10%												
Min Growth	119	208	260	604	1,946	22	198	758	145	685	962	254
2035 Roundec	120	210	260	600	1,950	20	200	760	150	680	960	250
2035 Adjusted	120	210	260	600	1,950	25	200	760	150	680	960	250

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at Tustin Centre Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				75	2151	210	
2435	553			SR	ST	SL	
113		71		EL		WR	39
120		357		ET		WT	6
2255	652			ER		WL	26
				NL	NT	NR	
In - Out	3278	3278	0	32	405	131	

							2	2	2	To E	To W
From N	0	2151	210	75	2436	2435.5		0	2151	210	75
From S	405	0	131	32	568	652		465	0	150	37
From E	39	26	0	6	71	71		39	26	0	6
From W	25	79	16	0	120	120		25	79	16	0
	To N	To S	To E	To W			ColTot	529	2256	376	118
							Target	553	2255	357	113
								To N	To S	To E	To W
From N	0	2150	199	72	2422	2435		0	2163	200	72
From S	486	0	143	35	664	652		477	0	140	35
From E	41	26	0	6	73	71		40	25	0	6
From W	26	79	15	0	120	120		26	79	15	0
	To N	To S	To E	To W			ColTot	543	2267	356	113
							Target	553	2255	357	113
								To N	To S	To E	To W
From N	0	2152	201	73	2426	2435		0	2161	202	73
From S	486	0	141	35	661	652		479	0	139	34
From E	41	25	0	6	72	71		40	25	0	6
From W	27	78	15	0	120	120		27	78	15	0
	To N	To S	To E	To W			ColTot	546	2264	356	113
							Target	553	2255	357	113
								To N	To S	To E	To W
From N	0	2152	203	73	2428	2435		0	2159	203	73
From S	485	0	139	34	659	652		480	0	138	34
From E	41	25	0	6	71	71		41	25	0	6
From W	27	78	15	0	120	120		27	78	15	0
	To N	To S	To E	To W			ColTot	548	2262	356	113
							Target	553	2255	357	113
							Pct	0.99045	1.0028	0.9977	0.99851

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	32	405	131	210	2151	75	25	16	79	26	6	39
2035	34	480	138	203	2159	73	27	15	78	25	6	41
2035 w 10%												
Min Growth	35	480	144	231	2,366	83	28	18	87	29	7	43
2035 Roundec	40	480	140	230	2,370	80	30	20	90	30	10	40
2035 Adjusted	40	480	140	230	2,370	80	30	20	90	30	10	40

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Ln - Cabrillo Pa at 17th St Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				29	94	78	
201	80			SR	ST	SL	
1184		1198		EL		WR	30
885		924		ET		WT	838
	337	241		ER		WL	165
				NL	NT	NR	
In - Out	2525	2525	0	119	39	85	

							2	2	2	To E	To W	
From N	0	94	78	29	RowTt	Target						
From S	39	0	85	119	201	201	0	94	78	29		
From E	30	165	0	838	243	241.08	39	0	84	118		
From W	11	221	769	0	1001	884.72	35	191	0	972		
	To N	To S	To E	To W			ColTot	83	481	842	1119	
							Target	80	337	924	1184	
From N	0	66	86	31	RowTt	Target		To N	To S	To E	To W	
From S	37	0	93	125	182	201		0	73	94	34	
From E	33	134	0	1028	255	241		35	0	88	118	
From W	9	137	746	0	1196	1198		34	134	0	1030	
	To N	To S	To E	To W				ColTot	78	343	922	1182
								Target	80	337	924	1184
From N	0	71	95	34	RowTt	Target		To N	To S	To E	To W	
From S	36	0	88	118	200	201		0	72	95	34	
From E	34	132	0	1032	242	241		36	0	87	118	
From W	10	133	742	0	1198	1198		34	132	0	1032	
	To N	To S	To E	To W				ColTot	80	337	924	1183
								Target	80	337	924	1184
From N	0	72	95	34	RowTt	Target		To N	To S	To E	To W	
From S	36	0	87	118	201	201		0	72	95	34	
From E	34	132	0	1032	241	241		36	0	87	118	
From W	10	133	742	0	1198	1198		34	132	0	1032	
	To N	To S	To E	To W				ColTot	80	337	925	1184
								Target	80	337	924	1184
							Pct	0.99976	1.0001	1.0002	0.9998	

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	119	39	85	78	94	29	11	769	221	165	838	30
2035	118	36	87	95	72	34	10	742	133	132	1032	34
2035 w 10% Min Growth	131	43	94	95	103	34	12	846	243	182	1,032	34
2035 Roundec	130	40	90	100	100	30	10	850	240	180	1,030	30
2035 Adjusted	130	40	90	100	100	30	15	850	240	180	1,030	35

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: derosa St - Den at 17th St Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				SR	ST	SL	
1911	22	33	1926	0			33
1580			1671	1414			1495
	22	107		22			0
					NT	NR	
In - Out	3634	3637	-2	0	0	107	

							2	2	2	To E	To W
From N	0	0	0	22	22	22		0	0	0	22
From S	0	0	107	0	107	107		0	0	107	0
From E	33	0	0	1495	1528	1925.8		42	0	0	1884
From W	0	22	1414	0	1436	1579.6		0	24	1555	0
	To N	To S	To E	To W			ColTot	42	24	1662	1906
							Target	33	22	1671	1911
								To N	To S	To E	To W
From N	0	0	0	22	22	22		0	0	0	22
From S	0	0	108	0	108	107		0	0	107	0
From E	33	0	0	1889	1922	1926		33	0	0	1893
From W	0	22	1563	0	1585	1580		0	22	1558	0
	To N	To S	To E	To W			ColTot	33	22	1665	1915
							Target	33	22	1671	1911
								To N	To S	To E	To W
From N	0	0	0	22	22	22		0	0	0	22
From S	0	0	107	0	107	107		0	0	107	0
From E	33	0	0	1889	1922	1926		33	0	0	1893
From W	0	22	1563	0	1585	1580		0	22	1558	0
	To N	To S	To E	To W			ColTot	33	22	1665	1915
							Target	33	22	1671	1911
								To N	To S	To E	To W
From N	0	0	0	22	22	22		0	0	0	22
From S	0	0	107	0	107	107		0	0	107	0
From E	33	0	0	1889	1922	1926		33	0	0	1893
From W	0	22	1563	0	1585	1580		0	22	1558	0
	To N	To S	To E	To W			ColTot	33	22	1665	1915
							Target	33	22	1671	1911
							Pct	1.00197	0.9964	0.9964	1.00197

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	0	0	107	0	0	22	0	1414	22	0	1495	33
2035	0	0	107	0	0	22	0	1558	22	0	1893	33
2035 w 10%												
Min Growth	0	0	118	0	0	24	0	1,558	24	0	1,893	36
2035 Roundec	0	0	120	0	0	20	0	1,560	20	0	1,890	40
2035 Adjusted	0	0	120	0	0	25	0	1,560	25	0	1,890	40

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: St - SR55 SB O at 17th St Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				395	1	1	
473	1			SR	ST	SL	
1938			1939	EL		WR	1
1664			1175	ET		WT	1146
	962	1		ER		WL	322
				NL	NT	NR	
In - Out	4077	4077	0	1	1	1	

							2	2	2	To E	To W
From N	0	1	1	395	397	473.25		0	1	1	471
From S	1	0	1	1	3	1		0	0	0	0
From E	1	322	0	1146	1469	1938.6		1	425	0	1512
From W	1	582	932	0	1515	1663.7		1	639	1023	0
	To N	To S	To E	To W			ColTot	3	1065	1025	1984
							Target	1	962	1175	1938
								To N	To S	To E	To W
From N	0	1	1	460	463	473		0	1	1	471
From S	0	0	0	0	1	1		0	0	0	0
From E	0	384	0	1478	1862	1939		0	400	0	1539
From W	0	577	1173	0	1751	1664		0	548	1115	0
	To N	To S	To E	To W			ColTot	1	949	1117	2010
							Target	1	962	1175	1938
								To N	To S	To E	To W
From N	0	1	1	454	457	473		0	1	2	471
From S	0	0	0	0	1	1		0	0	0	0
From E	0	405	0	1484	1889	1939		1	416	0	1523
From W	0	556	1173	0	1730	1664		0	535	1129	0
	To N	To S	To E	To W			ColTot	1	951	1131	1993
							Target	1	962	1175	1938
								To N	To S	To E	To W
From N	0	1	2	458	460	473		0	1	2	470
From S	0	0	1	0	1	1		0	0	0	0
From E	1	420	0	1480	1901	1939		1	428	0	1510
From W	0	541	1173	0	1714	1664		0	525	1139	0
	To N	To S	To E	To W			ColTot	1	954	1141	1980
							Target	1	962	1175	1938
							Pct	0.99813	0.9921	0.9706	1.02173

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	1	1	1	1	395	1	932	582	322	1146	1
2035	0	0	0	2	1	470	0	1139	525	428	1510	1
2035 w 10%												
Min Growth	1	1	1	2	1	470	1	1,139	640	428	1,510	1
2035 Roundec	0	0	0	0	0	470	0	1,140	640	430	1,510	0
2035 Adjusted	5	5	5	5	5	470	5	1,140	640	430	1,510	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: **55 SB Off-Ram** at **17th St** Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	1	1	
1939	1	1	1939	1	SR	ST	SL
1175			1954	932	EL		WR
	1	779		1	ET		WT
					ER		WL
					NL	NT	NR
In - Out	3894	3895	-1		1	1	666

From N	0	1	1	1	RowT	Target	2	2	2	To E	To W
From S	1	0	666	1	3	1	0	0	0	0	0
From E	1	1	0	1468	668	779	1	1	0	777	1
From W	1	1	932	0	1470	1938.6	1	1	0	1936	0
	To N	To S	To E	To W			ColTot	4	3	1949	1937
							Target	1	1	1954	1939
From N	0	0	0	0	RowT	Target		To N	To S	To E	To W
From S	0	0	778	1	1	1		0	0	0	0
From E	0	0	0	1937	780	779		0	0	778	1
From W	0	0	1175	0	1938	1939		0	0	0	1938
	To N	To S	To E	To W	1176	1175		0	0	1174	0
							ColTot	1	1	1952	1939
							Target	1	1	1954	1939
From N	0	0	0	0	RowT	Target		To N	To S	To E	To W
From S	0	0	778	1	1	1		0	0	0	0
From E	0	0	0	1937	780	779		0	0	778	1
From W	0	0	1175	0	1938	1939		0	0	0	1938
	To N	To S	To E	To W	1176	1175		0	0	1174	0
							ColTot	1	1	1952	1939
							Target	1	1	1954	1939
From N	0	0	0	0	RowT	Target		To N	To S	To E	To W
From S	0	0	778	1	1	1		0	0	0	0
From E	0	0	0	1937	780	779		0	0	778	1
From W	0	0	1175	0	1938	1939		0	0	0	1938
	To N	To S	To E	To W	1176	1175		0	0	1174	0
							ColTot	1	1	1952	1939
							Target	1	1	1954	1939
							Pct	0.99955	0.9998	0.9991	1.00041

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	1	666	1	1	1	1	932	1	1	1468	1
2035	1	0	778	0	0	0	0	1174	0	0	1938	0
2035 w 10%												
Min Growth	1	1	778	1	1	1	1	1,174	1	1	1,938	1
2035 Roundec	0	0	780	0	0	0	0	1,170	0	0	1,940	0
2035 Adjusted	5	5	780	5	5	5	5	1,170	5	5	1,940	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: **55 NB On-Ram** at **17th St** Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	1	1	
1881	1	1	1881	SR	ST	SL	
1964			1560	EL		WR	1
	404	1		ET		WT	1410
				ER		WL	1
				NL	NT	NR	
In - Out	3847	3846	1	1	1	1	

From N	0	1	1	1	RowTt	Target	2	2	2	To E	To W
From S	1	0	1	1	3	1		0	0	0	0
From E	1	1	0	1410	1412	1880.6		1	1	0	1878
From W	1	309	1299	0	1609	1964		1	377	1586	0
	To N	To S	To E	To W			ColTot	3	379	1586	1879
							Target	1	404	1560	1881
From N	0	0	0	0	RowTt	Target		To N	To S	To E	To W
From S	0	0	0	0	1	1		0	0	0	0
From E	0	1	0	1880	1882	1881		0	1	0	1879
From W	0	402	1559	0	1962	1964		0	403	1561	0
	To N	To S	To E	To W			ColTot	1	404	1562	1879
							Target	1	404	1560	1881
From N	0	0	0	0	RowTt	Target		To N	To S	To E	To W
From S	0	0	0	0	1	1		0	0	0	0
From E	0	1	0	1880	1882	1881		0	1	0	1879
From W	0	402	1559	0	1962	1964		0	403	1561	0
	To N	To S	To E	To W			ColTot	1	404	1562	1879
							Target	1	404	1560	1881
From N	0	0	0	0	RowTt	Target		To N	To S	To E	To W
From S	0	0	0	0	1	1		0	0	0	0
From E	0	1	0	1880	1882	1881		0	1	0	1879
From W	0	402	1559	0	1962	1964		0	403	1561	0
	To N	To S	To E	To W			ColTot	1	404	1562	1879
							Target	1	404	1560	1881
							Pct	1.00023	1.0011	1.0011	0.99942

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	1	1	1	1	1	1	1299	309	1	1410	1
2035	0	0	0	0	0	0	0	1561	403	1	1879	0
2035 w 10%												
Min Growth	1	1	1	1	1	1	1	1,561	403	1	1,879	1
2035 Roundec	0	0	0	0	0	0	0	1,560	400	0	1,880	0
2035 Adjusted	5	5	5	5	5	5	5	1,560	400	5	1,880	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Café - SR55 NB at 17th St Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	1	1	
1	832			SR	ST	SL	
1880			2369	1		WR	727
1560			1924	1299		WT	1082
	1	707		1		WL	1
					NL	NT	NR
In - Out	4636	4636	0	328	27	356	

	RowTt	Target	2	2	2	To E	To W
From N	0	1	1	1	3	1	0
From S	27	0	356	328	711	706.62	0
From E	727	1	0	1082	1810	2368.8	0
From W	1	1	1299	0	1301	1560	0
	To N	To S	To E	To W	ColTot	979	3
					Target	832	1
						1912	1742
						1924	1880

	RowTt	Target	To N	To S	To E	To W
From N	0	0	0	0	1	1
From S	23	0	356	352	731	707
From E	808	0	0	1528	2336	2369
From W	1	0	1567	0	1569	1560
	To N	To S	To E	To W	ColTot	842
					Target	832
						1
						1903
						1890
						1924
						1880

	RowTt	Target	To N	To S	To E	To W
From N	0	0	0	0	1	1
From S	22	0	348	338	708	707
From E	809	0	0	1541	2351	2369
From W	1	0	1575	0	1577	1560
	To N	To S	To E	To W	ColTot	838
					Target	832
						1
						1906
						1891
						1924
						1880

	RowTt	Target	To N	To S	To E	To W
From N	0	0	0	0	1	1
From S	22	0	350	336	708	707
From E	809	0	0	1544	2354	2369
From W	1	0	1573	0	1574	1560
	To N	To S	To E	To W	ColTot	837
					Target	832
						1
						1909
						1890
						1924
						1880
	Pct	1.00625	0.9991	0.9924	1.00506	

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	328	27	356	1	1	1	1	1299	1	1	1082	727
2035	335	22	350	0	0	0	1	1559	0	0	1554	814
2035 w 10%												
Min Growth	361	30	392	1	1	1	1	1,559	1	1	1,554	814
2035 Roundec	360	30	390	0	0	0	0	1,560	0	0	1,550	810
2035 Adjusted	360	30	390	5	5	5	5	1,560	5	5	1,550	810

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: roll Wy - Yorba at 17th St Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				98	47	48	
193	122			SR	ST	SL	
2345			2242	EL		WR	42
1924			1442	ET		WT	1557
	627	177		ER		WL	93
				NL	NT	NR	
In - Out	4536	4536	0	130	22	21	

							2	2	2	To E	To W
From N	0	47	48	98	RowT	Target					
					193	193		0	47	48	98
From S	22	0	21	130	173	176.56		22	0	21	133
From E	42	93	0	1557	1692	2242.2		56	123	0	2063
From W	58	270	1328	0	1656	1924.4		67	314	1543	0
	To N	To S	To E	To W			ColTot	146	484	1613	2294
							Target	122	627	1442	2345
								To N	To S	To E	To W
From N	0	61	43	100	204	193		0	58	41	95
From S	19	0	19	136	174	177		19	0	19	138
From E	47	160	0	2109	2316	2242		45	155	0	2043
From W	57	406	1380	0	1843	1924		59	424	1441	0
	To N	To S	To E	To W			ColTot	123	636	1501	2275
							Target	122	627	1442	2345
								To N	To S	To E	To W
From N	0	57	39	98	193	193		0	57	39	97
From S	19	0	19	142	180	177		19	0	18	140
From E	45	152	0	2105	2302	2242		44	148	0	2050
From W	58	418	1384	0	1861	1924		60	432	1432	0
	To N	To S	To E	To W			ColTot	122	637	1489	2288
							Target	122	627	1442	2345
								To N	To S	To E	To W
From N	0	56	38	100	193	193		0	56	38	100
From S	19	0	18	143	179	177		18	0	18	141
From E	43	146	0	2102	2291	2242		42	143	0	2057
From W	60	425	1387	0	1872	1924		62	437	1425	0
	To N	To S	To E	To W			ColTot	122	635	1481	2298
							Target	122	627	1442	2345
							Pct	1.00374	1.0139	1.0267	0.9797

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	130	22	21	48	47	98	58	1328	270	93	1557	42
2035	141	18	18	38	56	100	62	1425	437	143	2057	42
2035 w 10%												
Min Growth	143	24	23	53	56	108	64	1,461	437	143	2,057	46
2035 Roundec	140	20	20	50	60	110	60	1,460	440	140	2,060	50
2035 Adjusted	140	25	25	50	60	110	60	1,460	440	140	2,060	50

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: St - Enderle Cer at 17th St Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				280	262	228	
960	234			SR	ST	SL	
2239			1936	EL		WR	57
1486			1638	ET		WT	1389
	343	72		ER		WL	46
				NL	NT	NR	
In - Out	4454	4454	0	20	31	21	

						2	2	2	To E	To W	
From N	0	262	228	280	770	959.6		0	327	284	349
From S	31	0	21	20	72	72		31	0	21	20
From E	57	46	0	1389	1492	1936.3		74	60	0	1803
From W	106	35	1300	0	1441	1485.9		109	36	1340	0
	To N	To S	To E	To W			ColTot	214	422	1646	2172
							Target	234	343	1638	2239
							To N	To S	To E	To W	
From N	0	265	283	360	908	960		0	280	299	380
From S	34	0	21	21	75	72		32	0	20	20
From E	81	48	0	1859	1988	1936		79	47	0	1810
From W	119	29	1334	0	1483	1486		120	29	1337	0
	To N	To S	To E	To W			ColTot	231	357	1656	2210
							Target	234	343	1638	2239
							To N	To S	To E	To W	
From N	0	269	296	385	950	960		0	272	299	389
From S	33	0	20	20	73	72		33	0	20	20
From E	80	45	0	1834	1959	1936		79	45	0	1813
From W	121	28	1322	0	1472	1486		122	28	1335	0
	To N	To S	To E	To W			ColTot	234	345	1653	2221
							Target	234	343	1638	2239
							To N	To S	To E	To W	
From N	0	270	296	392	958	960		0	271	296	393
From S	33	0	19	20	72	72		33	0	19	20
From E	79	45	0	1827	1950	1936		78	44	0	1814
From W	122	28	1322	0	1473	1486		124	29	1334	0
	To N	To S	To E	To W			ColTot	234	343	1649	2227
							Target	234	343	1638	2239
							Pct	1.00208	1.001	1.0072	0.99436

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	20	31	21	228	262	280	106	1300	35	46	1389	57
2035	20	33	19	296	271	393	124	1334	29	44	1814	78
2035 w 10%												
Min Growth	22	34	23	296	288	393	124	1,430	39	51	1,814	78
2035 Roundec	20	30	20	300	290	390	120	1,430	40	50	1,810	80
2035 Adjusted	25	35	25	300	290	390	120	1,430	40	50	1,810	80

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Yorba St at Vandenberg Ln Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				SR	ST	SL	
2	590	155	305	0			50
1			59	1			0
	829	149		0			255
In - Out	1044	1044	0	NL	NT	NR	
				0	101	44	

From N	0	357	14	2	RowTt	Target	2	2	2	To E	To W
From S	101	0	44	0	373	589.69	0	0	564	22	3
From E	50	255	0	0	145	148.56	103	0	0	45	0
From W	0	0	1	0	305	305	50	255	0	0	0
	To N	To S	To E	To W	1	1	0	0	1	1	0
					ColTot		153	819	68	3	
					Target		155	829	59	2	
From N	0	571	19	2	RowTt	Target	To N	To S	To E	To W	
From S	104	0	39	0	592	590	0	569	19	2	
From E	50	258	0	0	143	149	108	0	40	0	
From W	0	0	1	0	308	305	50	255	0	0	
	To N	To S	To E	To W	1	1	0	0	1	0	
					ColTot		158	824	61	2	
					Target		155	829	59	2	
From N	0	572	19	2	RowTt	Target	To N	To S	To E	To W	
From S	106	0	39	0	593	590	0	569	19	2	
From E	49	257	0	0	145	149	108	0	40	0	
From W	0	0	1	0	305	305	49	256	0	0	
	To N	To S	To E	To W	1	1	0	0	1	0	
					ColTot		157	826	60	2	
					Target		155	829	59	2	
From N	0	571	18	2	RowTt	Target	To N	To S	To E	To W	
From S	107	0	40	0	592	590	0	570	18	2	
From E	48	257	0	0	146	149	108	0	40	0	
From W	0	0	1	0	305	305	48	257	0	0	
	To N	To S	To E	To W	1	1	0	0	1	0	
					ColTot		156	827	60	2	
					Target		155	829	59	2	
					Pct		1.01003	0.9975	1.0093	0.99672	

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	0	101	44	14	357	2	0	1	0	255	0	50
2035	0	108	40	18	570	2	0	1	0	257	0	48
2035 w 10% Min Growth	0	111	48	18	570	2	0	1	0	281	0	55
2035 Roundec	0	110	50	20	570	0	0	0	0	280	0	60
2035 Adjusted	0	110	50	20	570	5	0	5	0	280	0	60

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at North Proj Dwy - Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				9	2327	1	
2191	595			SR	ST	SL	
10			1	EL		WR	1
18			1	ET		WT	1
2200	596			ER		WL	1
			18	NL	NT	NR	
In - Out	2806	2806	0	1	527	1	

From						RowTt	Target	2	2	2	To E	To W
From N	0	2327	1	9	2337	2191.3		0	2182	1	8	
From S	527	0	1	1	529	595.58		593	0	1	1	
From E	1	1	0	1	3	1		0	0	0	0	
From W	1	18	1	0	20	18		1	16	1	0	
	To N	To S	To E	To W			ColTot	595	2198	3	10	
							Target	595	2200	1	10	
From						RowTt	Target	To N	To S	To E	To W	
From N	0	2184	0	9	2193	2191		0	2182	0	9	
From S	593	0	0	1	595	596		594	0	0	1	
From E	0	0	0	0	1	1		0	0	0	0	
From W	1	16	0	0	17	18		1	17	0	0	
	To N	To S	To E	To W			ColTot	595	2200	1	10	
							Target	595	2200	1	10	
From						RowTt	Target	To N	To S	To E	To W	
From N	0	2183	0	9	2192	2191		0	2182	0	9	
From S	593	0	0	1	595	596		594	0	0	1	
From E	0	0	0	0	1	1		0	0	0	0	
From W	1	17	0	0	18	18		1	17	0	0	
	To N	To S	To E	To W			ColTot	595	2200	1	10	
							Target	595	2200	1	10	
From						RowTt	Target	To N	To S	To E	To W	
From N	0	2183	0	9	2192	2191		0	2182	0	9	
From S	593	0	0	1	595	596		594	0	0	1	
From E	0	0	0	0	1	1		0	0	0	0	
From W	1	17	0	0	18	18		1	17	0	0	
	To N	To S	To E	To W			ColTot	595	2200	1	10	
							Target	595	2200	1	10	
Pct								1.00124	0.9997	1.0003	0.99986	

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	527	1	1	2327	9	1	1	18	1	1	1
2035	1	594	0	0	2182	9	1	0	17	0	0	0
2035 w 10%												
Min Growth	1	594	1	1	2,560	10	1	1	20	1	1	1
2035 Roundec	0	590	0	0	2,560	10	0	0	20	0	0	0
2035 Adjusted	5	590	5	5	2,560	10	5	5	20	5	5	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at South Proj Dwy - Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				31	2307	1	
2193	594			SR	ST	SL	
32			1	EL		WR	1
33			1	ET		WT	1
2195	595			ER		WL	1
				NL	NT	NR	
In - Out	2822	2822	0	1	526	1	

						2	2	2	To E	To W
From N	0	2307	1	31	RowTt	2339	2193.3			
From S	526	0	1	1	Target	528	594.58	592	0	1
From E	1	1	0	1		3	1	0	0	0
From W	1	33	1	0		35	33	1	31	1
	To N	To S	To E	To W		ColTot		594	2195	3
						Target		594	2195	1
										31
										32
From N	0	2164	0	30	RowTt	2195	2193	To N	To S	To E
From S	592	0	0	1	Target	594	595	0	2163	0
From E	0	0	0	0		1	1	593	0	0
From W	1	31	0	0		32	33	0	0	0
	To N	To S	To E	To W		ColTot		1	32	0
						Target		594	2195	1
								594	2195	1
										32
										32
From N	0	2163	0	30	RowTt	2194	2193	To N	To S	To E
From S	592	0	0	1	Target	594	595	0	2162	0
From E	0	0	0	0		1	1	593	0	0
From W	1	32	0	0		33	33	0	0	0
	To N	To S	To E	To W		ColTot		1	32	0
						Target		594	2195	1
								594	2195	1
										32
										32
From N	0	2163	0	30	RowTt	2194	2193	To N	To S	To E
From S	592	0	0	1	Target	594	595	0	2162	0
From E	0	0	0	0		1	1	593	0	0
From W	1	32	0	0		33	33	0	0	0
	To N	To S	To E	To W		ColTot		1	32	0
						Target		594	2195	1
								594	2195	1
										32
										32
						Pct		1.00122	0.9997	1.0003
								0.99974		

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	526	1	1	2307	31	1	1	33	1	1	1
2035	1	593	0	0	2162	30	1	0	32	0	0	0
2035 w 10% Min Growth	1	593	1	1	2,538	34	1	1	36	1	1	1
2035 Roundec	0	590	0	0	2,540	30	0	0	40	0	0	0
2035 Adjusted	5	590	5	5	2,540	35	5	5	40	5	5	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: 2035
 Intersection: Ponderosa St at Proj Dwy Time Period: 2035 Weekday AM

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	22	1	
1	22	33	1	SR	ST	SL	
1			1	EL		WR	1
			1	ET		WT	1
	22	33		ER		WL	1
				NL	NT	NR	
In - Out	57	57	0	1	33	1	

From N	0	22	1	1	RowTt	24	Target	22	2	2	2	To E	To W
From S	33	0	1	1	RowTt	35	Target	33	0	20	1	1	1
From E	1	1	0	1	RowTt	3	Target	1	31	0	1	1	1
From W	1	1	1	0	RowTt	3	Target	1	0	0	0	0	0
	To N	To S	To E	To W					ColTot	32	21	2	2
									Target	33	22	1	1
From N	0	21	0	0	RowTt	22	Target	22	To N	To S	To E	To W	
From S	32	0	0	0	RowTt	33	Target	33	0	21	0	0	0
From E	0	0	0	0	RowTt	1	Target	1	32	0	0	0	0
From W	0	0	0	0	RowTt	1	Target	1	0	0	0	0	0
	To N	To S	To E	To W					ColTot	33	22	1	1
									Target	33	22	1	1
From N	0	21	0	0	RowTt	22	Target	22	To N	To S	To E	To W	
From S	32	0	0	0	RowTt	33	Target	33	0	21	0	0	0
From E	0	0	0	0	RowTt	1	Target	1	32	0	0	0	0
From W	0	0	0	0	RowTt	1	Target	1	0	0	0	0	0
	To N	To S	To E	To W					ColTot	33	22	1	1
									Target	33	22	1	1
									Pct	0.99949	1.0008	1.0001	1.00013

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	33	1	1	22	1	1	1	1	1	1	1
2035	0	32	0	0	21	0	0	0	0	0	0	0
2035 w 10%												
Min Growth	1	36	1	1	24	1	1	1	1	1	1	1
2035 Roundec	0	40	0	0	20	0	0	0	0	0	0	0
2035 Adjusted	5	40	5	5	25	5	5	5	5	5	5	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at Catalina Ave Time Period: **2035 Weekday AM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				23	2915	37	
2830	617			SR	ST	SL	
41			62	EL		WR	58
47			48	ET		WT	0
2802	569			ER		WL	4
				NL	NT	NR	
In - Out	3508	3508	0	18	472	11	

						2	2	2	To E	To W
From N	0	2915	37	23	RowTt	2975	2830.3			
From S	472	0	11	18	Target	501	568.58	536	0	12
From E	58	4	0	0		62	62	58	4	0
From W	19	28	0	0		47	47	19	28	0
	To N	To S	To E	To W		ColTot		613	2805	48
						Target		617	2802	48
										41
From N	0	2770	35	21	RowTt	2827	2830	To N	To S	To E
From S	539	0	13	20	Target	571	569	0	2774	35
From E	58	4	0	0		62	62	536	0	13
From W	19	28	0	0		47	47	58	4	0
	To N	To S	To E	To W		ColTot		19	28	0
						Target		613	2805	48
								617	2802	48
										41
From N	0	2770	35	21	RowTt	2827	2830	To N	To S	To E
From S	539	0	13	20	Target	571	569	0	2773	36
From E	58	4	0	0		62	62	536	0	12
From W	19	28	0	0		47	47	58	4	0
	To N	To S	To E	To W		ColTot		19	28	0
						Target		614	2805	48
								617	2802	48
										41
From N	0	2771	36	21	RowTt	2827	2830	To N	To S	To E
From S	539	0	12	20	Target	571	569	0	2773	36
From E	58	4	0	0		62	62	537	0	12
From W	19	28	0	0		47	47	58	4	0
	To N	To S	To E	To W		ColTot		19	28	0
						Target		614	2805	48
								617	2802	48
										41
						Pct		0.99563	1.001	0.9996
								0.99838		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	18	472	11	37	2915	23	19	0	28	4	0	58
2035	20	537	12	36	2773	21	19	0	28	4	0	58
2035 w 10% Min Growth	20	537	12	41	3,207	25	21	0	31	4	0	64
2035 Roundec	20	540	10	40	3,210	30	20	0	30	0	0	60
2035 Adjusted	20	540	15	40	3,210	30	20	0	30	5	0	60

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at Santa Clara Ave Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				94	898	175	
	1118	1571		SR	ST	SL	
538			462	EL		WR	141
469			527	ET		WT	222
	1063	1650		ER		WL	74
				NL	NT	NR	
In - Out	3699	3699	0	189	1571	129	

						2	2	2	To E	To W	
From N	0	898	175	94	1167	1118.4	0	861	168	90	
From S	1571	0	129	189	1889	1649.5	1372	0	113	165	
From E	141	74	0	222	437	461.62	149	78	0	235	
From W	142	128	175	0	445	469.42	150	135	185	0	
	To N	To S	To E	To W			ColTot	1671	1074	465	490
							Target	1571	1063	527	538
							To N	To S	To E	To W	
From N	0	852	190	99	1141	1118	0	835	186	97	
From S	1290	0	128	181	1599	1650	1331	0	132	187	
From E	140	77	0	258	475	462	136	75	0	250	
From W	141	134	209	0	484	469	137	130	203	0	
	To N	To S	To E	To W			ColTot	1604	1040	521	535
							Target	1571	1063	527	538
							To N	To S	To E	To W	
From N	0	853	188	98	1140	1118	0	838	185	96	
From S	1304	0	133	188	1625	1650	1323	0	135	191	
From E	133	77	0	252	462	462	133	77	0	252	
From W	134	133	205	0	472	469	133	132	204	0	
	To N	To S	To E	To W			ColTot	1590	1046	524	539
							Target	1571	1063	527	538
							To N	To S	To E	To W	
From N	0	851	186	96	1132	1118	0	840	183	95	
From S	1308	0	136	191	1635	1650	1320	0	137	193	
From E	132	78	0	251	461	462	132	78	0	252	
From W	132	134	205	0	471	469	131	134	205	0	
	To N	To S	To E	To W			ColTot	1583	1052	525	539
							Target	1571	1063	527	538
							Pct	1.00749	0.9897	0.9967	1.00169

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	189	1571	129	175	898	94	142	175	128	74	222	141
2035	193	1320	137	183	840	95	131	205	134	78	252	132
2035 w 10%												
Min Growth	208	1,728	142	193	988	103	156	205	141	81	252	155
2035 Roundec	210	1,730	140	190	990	100	160	200	140	80	250	160
2035 Adjusted	210	1,730	140	190	990	100	160	200	140	80	250	160

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at 17th St Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				41	444	451	
899	1743			SR	ST	SL	
1447		1795	419	EL		WR	375
1527		2107	917	ET		WT	973
	904	1979	126	ER		WL	231
				NL	NT	NR	
In - Out	6201	6201	0	315	1188	564	

						2	2	2	To E	To W	
From N	0	444	451	41	936	898.86		0	426	433	39
From S	1188	0	564	315	2067	1979.4		1138	0	540	302
From E	375	231	0	973	1579	1795.1		426	263	0	1106
From W	419	126	917	0	1462	1527.3		438	132	958	0
	To N	To S	To E	To W			ColTot	2002	821	1931	1447
							Target	1743	904	2107	1447
							To N	To S	To E	To W	
From N	0	469	473	39	982	899		0	430	433	36
From S	990	0	589	302	1881	1979		1042	0	620	317
From E	371	289	0	1106	1766	1795		377	294	0	1124
From W	381	145	1045	0	1571	1527		370	141	1016	0
	To N	To S	To E	To W			ColTot	1789	865	2069	1477
							Target	1743	904	2107	1447
							To N	To S	To E	To W	
From N	0	449	441	35	926	899		0	436	428	34
From S	1015	0	632	311	1957	1979		1026	0	639	314
From E	367	307	0	1101	1775	1795		371	311	0	1113
From W	361	147	1035	0	1543	1527		357	146	1025	0
	To N	To S	To E	To W			ColTot	1755	893	2092	1462
							Target	1743	904	2107	1447
							To N	To S	To E	To W	
From N	0	442	431	34	907	899		0	438	428	34
From S	1019	0	644	311	1974	1979		1022	0	645	312
From E	369	314	0	1102	1785	1795		371	316	0	1108
From W	355	148	1032	0	1534	1527		353	147	1028	0
	To N	To S	To E	To W			ColTot	1746	901	2100	1454
							Target	1743	904	2107	1447
							Pct	1.00184	0.9967	0.9967	1.00464

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	315	1188	564	451	444	41	419	917	126	231	973	375
2035	312	1022	645	428	438	34	353	1028	147	316	1108	371
2035 w 10%												
Min Growth	347	1,307	645	496	488	45	461	1,028	147	316	1,108	413
2035 Roundec	350	1,310	650	500	490	50	460	1,030	150	320	1,110	410
2035 Adjusted	350	1,310	650	500	490	50	460	1,030	150	320	1,110	410

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at Tustin Centre Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				105	531	98	
837	1702			SR	ST	SL	
212		282		EL		WR	217
132		174		ET		WT	14
750	1587			ER		WL	51
				NL	NT	NR	
In - Out	2838	2838	0	93	1509	73	

						2	2	2	To E	To W
From N	0	531	98	105	734	836.6	0	605	112	120
From S	1509	0	73	93	1675	1587.4	1430	0	69	88
From E	217	51	0	14	282	282	217	51	0	14
From W	64	65	3	0	132	132	64	65	3	0
	To N	To S	To E	To W			ColTot	1711	721	184
							Target	1702	750	174
								To N	To S	To E
From N	0	629	106	114	849	837	0	620	104	113
From S	1423	0	65	84	1573	1587	1436	0	66	85
From E	216	53	0	13	282	282	216	53	0	13
From W	64	68	3	0	134	132	63	67	3	0
	To N	To S	To E	To W			ColTot	1715	739	173
							Target	1702	750	174
								To N	To S	To E
From N	0	628	105	113	846	837	0	621	104	112
From S	1426	0	66	85	1578	1587	1435	0	67	86
From E	214	54	0	13	281	282	215	54	0	13
From W	62	67	3	0	133	132	62	67	3	0
	To N	To S	To E	To W			ColTot	1711	742	173
							Target	1702	750	174
								To N	To S	To E
From N	0	627	104	112	844	837	0	622	103	111
From S	1427	0	67	86	1581	1587	1433	0	67	87
From E	214	54	0	14	281	282	214	54	0	14
From W	62	68	3	0	132	132	62	68	3	0
	To N	To S	To E	To W			ColTot	1709	744	173
							Target	1702	750	174
							Pct	1.00379	0.9929	0.9966
								0.99746		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	93	1509	73	98	531	105	64	3	65	51	14	217
2035	87	1433	67	103	622	111	62	3	68	54	14	214
2035 w 10% Min Growth	102	1,660	80	108	622	116	70	3	72	56	15	239
2035 Roundec	100	1,660	80	110	620	120	70	0	70	60	20	240
2035 Adjusted	100	1,660	80	110	620	120	70	5	70	60	20	240

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Ln - Cabrillo Pa at 17th St Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				48	60	126	
234	230			SR	ST	SL	
1580		1475	42	EL		WR	63
1167		1273	960	ET		WT	1195
	274	480	97	ER		WL	127
				NL	NT	NR	
In - Out	3356	3356	0	285	125	147	

						2	2	2	To E	To W	
From N	0	60	126	48	RowTt	234	234		126	48	
From S	125	0	147	285	557	479.84		108	0	246	
From E	63	127	0	1195	1385	1475.3		67	135	0	
From W	42	97	960	0	1099	1167.3		45	103	1020	
	To N	To S	To E	To W			ColTot	219	298	1272	
							Target	230	274	1273	
										1566	
From N	0	55	126	48	RowTt	230	234	To N	To S	To E	To W
From S	113	0	127	248	487	480		0	56	128	49
From E	70	124	0	1284	1478	1475		111	0	125	244
From W	47	95	1020	0	1161	1167		70	124	0	1281
	To N	To S	To E	To W			ColTot	47	95	1025	0
							Target	228	275	1279	1574
								230	274	1273	1580
From N	0	56	128	50	RowTt	233	234	To N	To S	To E	To W
From S	112	0	124	245	481	480		0	56	128	50
From E	71	123	0	1285	1480	1475		112	0	124	244
From W	47	95	1021	0	1163	1167		70	123	0	1282
	To N	To S	To E	To W			ColTot	48	95	1025	0
							Target	230	274	1277	1576
								230	274	1273	1580
From N	0	56	128	50	RowTt	234	234	To N	To S	To E	To W
From S	112	0	124	245	480	480		0	56	128	50
From E	71	123	0	1285	1479	1475		112	0	123	245
From W	48	95	1021	0	1164	1167		70	123	0	1282
	To N	To S	To E	To W			ColTot	48	95	1024	0
							Target	230	274	1276	1577
								230	274	1273	1580
							Pct	0.99954	1.0003	1.0024	0.99808

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	285	125	147	126	60	48	42	960	97	127	1195	63
2035	245	112	123	128	56	50	48	1024	95	123	1282	70
2035 w 10%												
Min Growth	314	138	162	139	66	53	48	1,056	107	140	1,315	70
2035 Roundec	310	140	160	140	70	50	50	1,060	110	140	1,310	70
2035 Adjusted	310	140	160	140	70	50	50	1,060	110	140	1,310	70

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: derosa St - Dem at 17th St Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				SR	ST	SL	
36	76			36	0	0	
1809		1856		EL		WR	76
2135		1936		ET		WT	1557
	213	11		ER		WL	0
				NL	NT	NR	
In - Out	4039	4034	5	0	0	11	

							2	2	2	To E	To W
From N	0	0	0	36	36	36		0	0	0	36
From S	0	0	11	0	11	11		0	0	11	0
From E	76	0	0	1557	1633	1856.3		86	0	0	1770
From W	0	213	1747	0	1960	2135.4		0	232	1903	0
	To N	To S	To E	To W			ColTot	86	232	1914	1806
							Target	76	213	1936	1809
								To N	To S	To E	To W
From N	0	0	0	36	36	36		0	0	0	36
From S	0	0	11	0	11	11		0	0	11	0
From E	76	0	0	1773	1849	1856		76	0	0	1780
From W	0	213	1925	0	2138	2135		0	213	1923	0
	To N	To S	To E	To W			ColTot	76	213	1934	1816
							Target	76	213	1936	1809
								To N	To S	To E	To W
From N	0	0	0	36	36	36		0	0	0	36
From S	0	0	11	0	11	11		0	0	11	0
From E	76	0	0	1773	1849	1856		76	0	0	1780
From W	0	213	1925	0	2138	2135		0	213	1923	0
	To N	To S	To E	To W			ColTot	76	213	1934	1816
							Target	76	213	1936	1809
								To N	To S	To E	To W
From N	0	0	0	36	36	36		0	0	0	36
From S	0	0	11	0	11	11		0	0	11	0
From E	76	0	0	1773	1849	1856		76	0	0	1780
From W	0	213	1925	0	2138	2135		0	213	1923	0
	To N	To S	To E	To W			ColTot	76	213	1934	1816
							Target	76	213	1936	1809
							Pct	1.00381	0.9988	0.9988	1.00381

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	0	0	11	0	0	36	0	1747	213	0	1557	76
2035	0	0	11	0	0	36	0	1923	213	0	1780	76
2035 w 10%												
Min Growth	0	0	12	0	0	40	0	1,923	234	0	1,780	84
2035 Roundec	0	0	10	0	0	40	0	1,920	230	0	1,780	80
2035 Adjusted	0	0	15	0	0	40	0	1,920	230	0	1,780	80

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: St - SR55 SB O at 17th St Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North							
584	1			435	1	1	
1805		1679		SR	ST	SL	
1856		1355		EL		WR	1
	958	1		ET		WT	1147
				ER		WL	400
				NL	NT	NR	
In - Out	4120	4120	0	1	1	1	

							2	2	2	To E	To W
From N	0	1	1	435	437	583.77				1	581
From S	1	0	1	1	3	1			0	0	0
From E	1	400	0	1147	1548	1678.9		1	434	0	1244
From W	1	514	1164	0	1679	1856.1		1	568	1287	0
	To N	To S	To E	To W			ColTot	3	1003	1288	1825
							Target	1	958	1355	1805
								To N	To S	To E	To W
From N	0	1	1	575	577	584		0	1	1	581
From S	0	0	0	0	1	1		0	0	0	0
From E	0	414	0	1230	1645	1679		0	423	0	1256
From W	0	542	1354	0	1897	1856		0	531	1325	0
	To N	To S	To E	To W			ColTot	1	955	1327	1837
							Target	1	958	1355	1805
								To N	To S	To E	To W
From N	0	1	1	571	574	584		0	1	1	581
From S	0	0	0	0	1	1		0	0	0	0
From E	0	424	0	1234	1659	1679		0	429	0	1249
From W	0	533	1354	0	1887	1856		0	524	1332	0
	To N	To S	To E	To W			ColTot	1	955	1334	1831
							Target	1	958	1355	1805
								To N	To S	To E	To W
From N	0	1	2	573	576	584		0	1	2	581
From S	0	0	0	0	1	1		0	0	0	0
From E	0	431	0	1232	1663	1679		0	435	0	1244
From W	0	526	1354	0	1880	1856		0	519	1336	0
	To N	To S	To E	To W			ColTot	1	955	1338	1825
							Target	1	958	1355	1805
							Pct	0.99861	0.9974	0.9875	1.01081

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	1	1	1	1	435	1	1164	514	400	1147	1
2035	0	0	0	2	1	581	0	1336	519	435	1244	0
2035 w 10% Min Growth	1	1	1	2	1	581	1	1,336	565	440	1,262	1
2035 Roundec	0	0	0	0	0	580	0	1,340	570	440	1,260	0
2035 Adjusted	5	5	5	5	5	580	5	1,340	570	440	1,260	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: **55 SB Off-Ram** at **17th St** Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	1	1	
1679	1	1	1679	1	SR	ST	SL
1355			2296	1164	EL		WR
	1	940		1	ET		WT
					ER		WL
					NL	NT	NR
In - Out	3976	3977	-1		1	1	767

						2	2	2	To E	To W
From N	0	1	1	1	RowT	Target				
From S	1	0	767	1	769	940.39	0	0	0	0
From E	1	1	0	1547	1549	1678.9	1	1	0	1677
From W	1	1	1164	0	1166	1355.2	1	1	1353	0
	To N	To S	To E	To W			ColTot	3	3	2291
							Target	1	1	2296
								To N	To S	To E
From N	0	0	0	0	1	1	0	0	0	0
From S	0	0	940	1	941	940	0	0	939	1
From E	0	0	0	1677	1678	1679	0	0	0	1678
From W	0	0	1356	0	1356	1355	0	0	1354	0
	To N	To S	To E	To W			ColTot	1	1	2294
							Target	1	1	2296
								To N	To S	To E
From N	0	0	0	0	1	1	0	0	0	0
From S	0	0	940	1	941	940	0	0	939	1
From E	0	0	0	1677	1678	1679	0	0	0	1678
From W	0	0	1356	0	1356	1355	0	0	1354	0
	To N	To S	To E	To W			ColTot	1	1	2294
							Target	1	1	2296
								To N	To S	To E
From N	0	0	0	0	1	1	0	0	0	0
From S	0	0	940	1	941	940	0	0	939	1
From E	0	0	0	1677	1678	1679	0	0	0	1678
From W	0	0	1356	0	1356	1355	0	0	1354	0
	To N	To S	To E	To W			ColTot	1	1	2294
							Target	1	1	2296
							Pct	0.9996	0.9999	0.9992
								1.00055		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	1	767	1	1	1	1	1164	1	1	1547	1
2035	1	0	939	0	0	0	0	1354	0	0	1678	0
2035 w 10%												
Min Growth	1	1	939	1	1	1	1	1,354	1	1	1,702	1
2035 Roundec	0	0	940	0	0	0	0	1,350	0	0	1,700	0
2035 Adjusted	5	5	940	5	5	5	5	1,350	5	5	1,700	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: **55 NB On-Ram** at **17th St** Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	1	1	
1665	1	1	1665	SR	ST	SL	
2238			1746	EL		WR	1
	492	1		ET		WT	1533
				ER		WL	1
				NL	NT	NR	
In - Out	3905	3904	1	1	1	1	

							2	2	2	To E	To W
From N	0	1	1	1	RowT	Target					
From S	1	0	1	1	3	1	0	0	0	0	0
From E	1	1	0	1533	1535	1664.9	1	1	0	1663	
From W	1	486	1387	0	1874	2237.6	1	580	1656	0	
	To N	To S	To E	To W			ColTot	3	582	1657	1663
							Target	1	492	1746	1665
								To N	To S	To E	To W
From N	0	0	0	0	1	1	0	0	0	0	0
From S	0	0	0	0	1	1	0	0	0	0	0
From E	0	1	0	1664	1665	1665	0	1	0	1664	
From W	0	490	1746	0	2236	2238	0	491	1747	0	
	To N	To S	To E	To W			ColTot	1	492	1747	1664
							Target	1	492	1746	1665
								To N	To S	To E	To W
From N	0	0	0	0	1	1	0	0	0	0	0
From S	0	0	0	0	1	1	0	0	0	0	0
From E	0	1	0	1664	1665	1665	0	1	0	1664	
From W	0	490	1746	0	2236	2238	0	491	1747	0	
	To N	To S	To E	To W			ColTot	1	492	1747	1664
							Target	1	492	1746	1665
								To N	To S	To E	To W
From N	0	0	0	0	1	1	0	0	0	0	0
From S	0	0	0	0	1	1	0	0	0	0	0
From E	0	1	0	1664	1665	1665	0	1	0	1664	
From W	0	490	1746	0	2236	2238	0	491	1747	0	
	To N	To S	To E	To W			ColTot	1	492	1747	1664
							Target	1	492	1746	1665
							Pct	1.00023	1.0006	1.0006	0.99979

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	1	1	1	1	1	1	1387	486	1	1533	1
2035	0	0	0	0	0	0	0	1747	491	1	1664	0
2035 w 10%												
Min Growth	1	1	1	1	1	1	1	1,747	535	1	1,686	1
2035 Roundec	0	0	0	0	0	0	0	1,750	530	0	1,690	0
2035 Adjusted	5	5	5	5	5	5	5	1,750	530	5	1,690	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Café - SR55 NB at 17th St Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	1	1	
1665	1	916	2149	SR	ST	SL	826
1746			1955	EL		WR	1129
	1	641		ET		WT	
				ER		WL	1
				NL	NT	NR	
In - Out	4538	4538	0	404	24	199	

						2	2	2	To E	To W
From N	0	1	1	1	RowT	3	Target	1		
From S	24	0	199	404	627	640.95		0	0	0
From E	826	1	0	1129	1956	2149.3		25	0	203
From W	1	1	1387	0	1389	1746.3		908	1	0
	To N	To S	To E	To W			ColTot	1	1	1744
							Target	933	3	1948
								916	1	1955
										1654
										1665
From N	0	0	0	0	RowT	1	Target	1	To N	To S
From S	24	0	204	416	644	641		0	0	0
From E	891	0	0	1249	2140	2149		24	0	203
From W	1	0	1751	0	1752	1746		895	0	0
	To N	To S	To E	To W			ColTot	1	0	1745
							Target	920	1	1948
								916	1	1955
										1669
										1665
From N	0	0	0	0	RowT	1	Target	1	To N	To S
From S	24	0	204	413	641	641		0	0	0
From E	891	0	0	1252	2143	2149		24	0	204
From W	1	0	1751	0	1753	1746		894	0	0
	To N	To S	To E	To W			ColTot	1	0	1745
							Target	919	1	1949
								916	1	1955
										1669
										1665
From N	0	0	0	0	RowT	1	Target	1	To N	To S
From S	24	0	205	412	641	641		0	0	0
From E	891	0	0	1253	2144	2149		24	0	205
From W	1	0	1750	0	1752	1746		893	0	0
	To N	To S	To E	To W			ColTot	1	0	1745
							Target	918	1	1950
								916	1	1955
										1668
										1665
							Pct	1.0024	0.9995	0.9972
								1.00198		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	404	24	199	1	1	1	1	1387	1	1	1129	826
2035	412	24	205	0	0	0	1	1745	0	0	1256	893
2035 w 10%												
Min Growth	444	26	219	1	1	1	1	1,745	1	1	1,256	909
2035 Roundec	440	30	220	0	0	0	0	1,740	0	0	1,260	910
2035 Adjusted	440	30	220	5	5	5	5	1,740	5	5	1,260	910

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: rroll Wy - Yorba at 17th St Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				SR	ST	SL	
2150	261	241	1756	127		WR	31
1955			1768	1276		WT	1500
	274	461		182		WL	44
					NL	NT	NR
In - Out	4433	4433	0	323	83	92	

						2	2	2	To E	To W
From N	0	26	102	133	261	261	0	26	102	133
From S	83	0	92	323	498	461.27	77	0	85	299
From E	31	44	0	1500	1575	1756.2	35	49	0	1673
From W	127	182	1276	0	1585	1954.8	157	224	1574	0
	To N	To S	To E	To W			ColTot	268	300	1761
							Target	241	274	1768
								To N	To S	To E
From N	0	24	102	136	262	261	0	24	102	135
From S	69	0	86	306	460	461	69	0	86	306
From E	31	45	0	1709	1785	1756	31	44	0	1681
From W	141	205	1580	0	1926	1955	143	208	1603	0
	To N	To S	To E	To W			ColTot	243	276	1791
							Target	241	274	1768
								To N	To S	To E
From N	0	24	101	137	261	261	0	23	101	137
From S	69	0	85	310	464	461	68	0	84	309
From E	30	44	0	1703	1777	1756	30	43	0	1683
From W	142	207	1583	0	1931	1955	144	209	1602	0
	To N	To S	To E	To W			ColTot	242	276	1787
							Target	241	274	1768
								To N	To S	To E
From N	0	23	100	138	261	261	0	23	99	138
From S	68	0	83	312	463	461	68	0	83	310
From E	30	43	0	1700	1773	1756	30	43	0	1684
From W	143	208	1585	0	1936	1955	144	210	1601	0
	To N	To S	To E	To W			ColTot	242	276	1783
							Target	241	274	1768
							Pct	1.00341	1.0059	1.0085
								0.99189		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	323	83	92	102	26	133	127	1276	182	44	1500	31
2035	310	68	83	99	23	138	144	1601	210	43	1684	30
2035 w 10%												
Min Growth	355	91	101	112	29	146	144	1,601	210	48	1,684	34
2035 Roundec	360	90	100	110	30	150	140	1,600	210	50	1,680	30
2035 Adjusted	360	90	100	110	30	150	140	1,600	210	50	1,680	35

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: St - Enderle Cer at 17th St Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				140	72	81	
436	565			SR	ST	SL	
1781		1793		EL		WR	205
1726		1708		ET		WT	1380
	174	273		ER		WL	56
				NL	NT	NR	
In - Out	4228	4228	0	80	163	30	

						2	2	2	To E	To W
From N	0	72	81	140	RowT 293	436.02	0	107	121	208
From S	163	0	30	80	273	273	163	0	30	80
From E	205	56	0	1380	1641	1793.5	224	61	0	1508
From W	192	46	1190	0	1428	1726	232	56	1438	0
	To N	To S	To E	To W			ColTot 619	224	1589	1797
							Target 565	174	1708	1781
							To N	To S	To E	To W
From N	0	83	130	207	419	436	0	87	135	215
From S	149	0	32	79	260	273	156	0	34	83
From E	205	48	0	1495	1748	1793	210	49	0	1535
From W	212	43	1546	0	1801	1726	203	41	1481	0
	To N	To S	To E	To W			ColTot 569	177	1650	1833
							Target 565	174	1708	1781
							To N	To S	To E	To W
From N	0	85	139	209	433	436	0	86	140	210
From S	155	0	35	81	271	273	156	0	35	81
From E	209	48	0	1492	1748	1793	214	49	0	1530
From W	202	41	1533	0	1776	1726	196	40	1490	0
	To N	To S	To E	To W			ColTot 566	175	1666	1822
							Target 565	174	1708	1781
							To N	To S	To E	To W
From N	0	85	144	205	435	436	0	86	144	206
From S	156	0	36	80	272	273	157	0	36	80
From E	214	49	0	1496	1759	1793	218	50	0	1526
From W	196	39	1528	0	1763	1726	192	39	1496	0
	To N	To S	To E	To W			ColTot 566	174	1676	1812
							Target 565	174	1708	1781
						Pct	1.00132	1.0024	0.9816	1.01701

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	80	163	30	81	72	140	192	1190	46	56	1380	205
2035	80	157	36	144	86	206	192	1496	39	50	1526	218
2035 w 10%												
Min Growth	88	179	36	144	86	206	211	1,496	51	62	1,526	226
2035 Roundec	90	180	40	140	90	210	210	1,500	50	60	1,530	230
2035 Adjusted	90	180	40	140	90	210	210	1,500	50	60	1,530	230

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Yorba St at Vandenberg Ln Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				SR	ST	SL	
4	220	412	177	2		WR	114
3			146	1		WT	0
	253	415		0		WL	63
						NL	
						NT	
In - Out	815	815	0	1	333	NR	118

						2	2	2	To E	To W		
From N	0	168	27	3	RowTt	198	220.16	0	187	30	3	
From S	333	0	118	1	Target	415.27		306	0	108	1	
From E	114	63	0	0				114	63	0	0	
From W	2	0	1	0				2	0	1	0	
	To N	To S	To E	To W				ColTot	422	250	139	4
								Target	412	253	146	4
								To N	To S	To E	To W	
From N	0	189	31	3	RowTt	224	220	0	186	31	3	
From S	299	0	114	1	Target	413	415	300	0	114	1	
From E	111	64	0	0		175	177	113	64	0	0	
From W	2	0	1	0		3	3	2	0	1	0	
	To N	To S	To E	To W				ColTot	415	251	146	4
								Target	412	253	146	4
								To N	To S	To E	To W	
From N	0	188	31	3	RowTt	222	220	0	186	31	3	
From S	299	0	114	1	Target	413	415	300	0	115	1	
From E	112	65	0	0		177	177	112	65	0	0	
From W	2	0	1	0		3	3	2	0	1	0	
	To N	To S	To E	To W				ColTot	414	252	146	4
								Target	412	253	146	4
								To N	To S	To E	To W	
From N	0	188	31	3	RowTt	221	220	0	187	30	3	
From S	299	0	114	1	Target	414	415	300	0	115	1	
From E	111	66	0	0		177	177	111	66	0	0	
From W	2	0	1	0		3	3	2	0	1	0	
	To N	To S	To E	To W				ColTot	413	252	146	4
								Target	412	253	146	4
						Pct	1.00201	0.9961	1.0012	0.99661		

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	333	118	27	168	3	2	1	0	63	0	114
2035	1	300	115	30	187	3	2	1	0	66	0	111
2035 w 10% Min Growth	1	366	130	30	187	3	2	1	0	69	0	125
2035 Roundec	0	370	130	30	190	0	0	0	0	70	0	130
2035 Adjusted	5	370	130	30	190	5	5	5	0	70	0	130

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at North Proj Dwy - Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				SR	ST	SL	
7	862	1715	1	4			1
9			1	1			1
	865	1716		5			1
					NL	NT	NR
In - Out	2587	2587	0	5	1950		1

From						RowTt	Target	To			
From N	0	897	1	2	900	861.86	2	2	2	To E	To W
From S	1950	0	1	5	1956	1715.5		0	859	1	2
From E	1	1	0	1	3	1		1710	0	1	4
From W	4	5	1	0	10	9		0	0	0	0
	To N	To S	To E	To W			ColTot	4	5	1	0
							Target	1714	864	3	7
								1715	865	1	7
From N	0	860	0	2	862	862		To N	To S	To E	To W
From S	1711	0	0	5	1716	1716		0	859	0	2
From E	0	0	0	0	1	1		1711	0	0	5
From W	4	5	0	0	8	9		0	0	0	0
	To N	To S	To E	To W			ColTot	4	5	0	0
							Target	1715	865	1	7
								1715	865	1	7
From N	0	860	0	2	862	862		To N	To S	To E	To W
From S	1710	0	0	5	1715	1716		0	859	0	2
From E	0	0	0	0	1	1		1711	0	0	5
From W	4	5	0	0	9	9		0	0	0	0
	To N	To S	To E	To W			ColTot	4	5	0	0
							Target	1715	865	1	7
								1715	865	1	7
From N	0	860	0	2	862	862		To N	To S	To E	To W
From S	1710	0	0	5	1715	1716		0	859	0	2
From E	0	0	0	0	1	1		1711	0	0	5
From W	4	5	0	0	9	9		0	0	0	0
	To N	To S	To E	To W			ColTot	4	5	0	0
							Target	1715	865	1	7
								1715	865	1	7
							Pct	1.00013	0.9997	0.9999	1.00001

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	5	1950	1	1	897	2	4	1	5	1	1	1
2035	5	1711	0	0	859	2	4	0	5	0	0	0
2035 w 10%												
Min Growth	6	2,145	1	1	987	2	4	1	6	1	1	1
2035 Roundec	10	2,150	0	0	990	0	0	0	10	0	0	0
2035 Adjusted	10	2,150	5	5	990	5	5	5	10	5	5	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at South Proj Dwy - Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				SR	ST	SL	
43	868	1714	1	18			1
66			1	1			1
	881	1704		48			1
In - Out	2638	2638	0	8	1935		1

						2	2	2	To E	To W
From N	0	870	1	35	RowTt	906	867.86			
From S	1935	0	1	8	RowTt	1944	1703.5	1696	0	1
From E	1	1	0	1	RowTt	3	1	0	0	0
From W	18	48	1	0	RowTt	67	66	18	47	1
	To N	To S	To E	To W				ColTot	1714	881
								Target	1714	881
									3	41
									1	43
From N	0	833	0	35	RowTt	869	868	To N	To S	To E
From S	1695	0	0	7	RowTt	1703	1704	0	832	0
From E	0	0	0	0	RowTt	1	1	1696	0	0
From W	18	47	0	0	RowTt	65	66	0	0	0
	To N	To S	To E	To W				ColTot	1714	880
								Target	1714	881
									1	43
									1	43
From N	0	833	0	35	RowTt	868	868	To N	To S	To E
From S	1695	0	0	7	RowTt	1703	1704	0	832	0
From E	0	0	0	0	RowTt	1	1	1696	0	0
From W	18	48	0	0	RowTt	66	66	0	0	0
	To N	To S	To E	To W				ColTot	1714	880
								Target	1714	881
									1	43
									1	43
From N	0	833	0	35	RowTt	868	868	To N	To S	To E
From S	1695	0	0	7	RowTt	1703	1704	0	832	0
From E	0	0	0	0	RowTt	1	1	1696	0	0
From W	18	48	0	0	RowTt	66	66	0	0	0
	To N	To S	To E	To W				ColTot	1714	880
								Target	1714	881
									1	43
									1	43
								Pct	1.0003	0.9994
									0.9998	0.99959

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	8	1935	1	1	870	35	18	1	48	1	1	1
2035	7	1696	0	0	832	35	18	0	48	0	0	0
2035 w 10% Min Growth	9	2,129	1	1	957	39	20	1	53	1	1	1
2035 Roundec	10	2,130	0	0	960	40	20	0	50	0	0	0
2035 Adjusted	10	2,130	5	5	960	40	20	5	50	5	5	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Ponderosa St at Proj Dwy Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				1	36	1	
1	36	76	1	SR	ST	SL	
1			1	EL		WR	1
			1	ET		WT	1
	36	76		ER		WL	1
				NL	NT	NR	
In - Out	114	114	0	1	76	1	

							2	2	2	To E	To W		
From N	0	36	1	1	RowTt	Target	38	36	0	34	1	1	
From S	76	0	1	1			78	76	74	0	1	1	
From E	1	1	0	1			3	1	0	0	0	0	
From W	1	1	1	0			3	1	0	0	0	0	
	To N	To S	To E	To W					ColTot	75	35	2	2
									Target	76	36	1	1
									To N	To S	To E	To W	
From N	0	35	0	0	RowTt	Target	36	36	0	35	0	0	
From S	75	0	0	0			76	76	75	0	0	0	
From E	0	0	0	0			1	1	0	0	0	0	
From W	0	0	0	0			1	1	0	0	0	0	
	To N	To S	To E	To W					ColTot	76	36	1	1
									Target	76	36	1	1
									To N	To S	To E	To W	
From N	0	35	0	0	RowTt	Target	36	36	0	35	0	0	
From S	75	0	0	0			76	76	75	0	0	0	
From E	0	0	0	0			1	1	0	0	0	0	
From W	0	0	0	0			1	1	0	0	0	0	
	To N	To S	To E	To W					ColTot	76	36	1	1
									Target	76	36	1	1
									To N	To S	To E	To W	
From N	0	35	0	0	RowTt	Target	36	36	0	35	0	0	
From S	75	0	0	0			76	76	75	0	0	0	
From E	0	0	0	0			1	1	0	0	0	0	
From W	0	0	0	0			1	1	0	0	0	0	
	To N	To S	To E	To W					ColTot	76	36	1	1
									Target	76	36	1	1
							Pct	0.99975	1.0005	1.0001	1.00015		

Year	Turn Movements and Traffic Volumes											
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	1	76	1	1	36	1	1	1	1	1	1	1
2035	0	75	0	0	35	0	0	0	0	0	0	0
2035 w 10% Min Growth	1	84	1	1	40	1	1	1	1	1	1	1
2035 Roundec	0	80	0	0	40	0	0	0	0	0	0	0
2035 Adjusted	5	80	5	5	40	5	5	5	5	5	5	5

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South East/West Scenario: **2035**
 Intersection: Tustin Ave at Catalina Ave Time Period: **2035 Weekday PM**

Link Inputs (future)				Turn Move Inputs (existing)			
North				48	1389	40	
1440	1767			SR	ST	SL	
93		56	20	EL		WR	50
42		62	0	ET		WT	2
1378	1762		22	ER		WL	4
				NL	NT	NR	
In - Out	3299	3299	0	43	1936	22	

					RowTt	Target	2	2	2	To E	To W
From N	0	1389	40	48	1477	1439.9				39	47
From S	1936	0	22	43	2001	1761.5		1704	0	19	38
From E	50	4	0	2	56	56		50	4	0	2
From W	20	22	0	0	42	42		20	22	0	0
	To N	To S	To E	To W			ColTot	1774	1380	58	87
							Target	1767	1378	62	93
					RowTt	Target	To N	To S	To E	To W	
From N	0	1352	41	50	1444	1440	0	1348	41	50	
From S	1697	0	21	41	1758	1762	1700	0	21	41	
From E	50	4	0	2	56	56	50	4	0	2	
From W	20	22	0	0	42	42	20	22	0	0	
	To N	To S	To E	To W			ColTot	1770	1374	62	93
							Target	1767	1378	62	93
					RowTt	Target	To N	To S	To E	To W	
From N	0	1352	41	50	1443	1440	0	1349	41	50	
From S	1697	0	21	41	1758	1762	1700	0	21	41	
From E	50	4	0	2	56	56	50	4	0	2	
From W	20	22	0	0	42	42	20	22	0	0	
	To N	To S	To E	To W			ColTot	1770	1375	62	93
							Target	1767	1378	62	93
					RowTt	Target	To N	To S	To E	To W	
From N	0	1352	41	50	1443	1440	0	1349	41	50	
From S	1697	0	21	41	1758	1762	1700	0	21	41	
From E	50	4	0	2	56	56	50	4	0	2	
From W	20	22	0	0	42	42	20	22	0	0	
	To N	To S	To E	To W			ColTot	1770	1375	62	93
							Target	1767	1378	62	93
							Pct	1.00173	0.9978	0.9991	0.99963

Turn Movements and Traffic Volumes												
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	43	1936	22	40	1389	48	20	0	22	4	2	50
2035	41	1700	21	41	1349	50	20	0	22	4	2	50
2035 w 10%												
Min Growth	47	2,130	24	44	1,528	53	22	0	24	4	2	55
2035 Roundec	50	2,130	20	40	1,530	50	20	0	20	0	0	60
2035 Adjusted	50	2,130	25	45	1,530	50	25	0	25	5	5	60

Postprocessing - Weekday AM

Location (Interesection)		Link	Peak Period Volume (vph)				Diff *	0.36	Peak Hour Volume (vph)					
			Base Year		Future Year				Calib Adj Yr		Existing Count		Fut (Exist+Growth)	
			2010		2035				6	25	2016		IN	OUT
N/S Street	E/W Street	(leg)	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT		
1	Tustin Ave @ Santa Clara Ave	N Leg	5843	817	4794	1050	-378	84	-287	64	2805	614	2518	678
		S Leg	624	4699	872	4170	89	-190	68	-145	572	2899	640	2754
		E Leg	139	637	258	479	43	-57	33	-43	423	505	456	462
		W Leg	119	572	238	463	43	-39	33	-30	575	357	608	327
		Total	6725	6725	6162	6162	-203	-203	-154	-154	4375	4375	4221	4221
2	Tustin Ave @ 17th St	N Leg	4699	624	4170	871	-190	89	-145	68	2338	575	2193	643
		S Leg	539	3699	846	3697	111	-1	84	-1	503	2442	587	2441
		E Leg	4999	3982	6439	4507	518	189	394	144	1507	1431	1901	1575
		W Leg	2590	4522	2914	5296	117	279	89	212	985	885	1074	1097
		Total	12827	12827	14369	14371	555	556	422	422	5333	5333	5755	5755
3	Tustin Ave @ Tustin Centre	N Leg	3699	539	3697	846	-1	111	-1	84	2436	469	2435	553
		S Leg	539	3699	846	3697	111	-1	84	-1	568	2256	652	2255
		E Leg	0	0	0	0	0	0	0	0	71	357	71	357
		W Leg	0	0	0	0	0	0	0	0	120	113	120	113
		Total	4238	4238	4543	4543	110	110	83	83	3195	3195	3278	3278
4	erry Ln - Cabri @ Park Ave	N Leg	0	0	0	0	0	0	0	0	201	80	201	80
		S Leg	205	1502	198	978	-3	-189	-2	-143	243	480	241	337
		E Leg	3225	2532	3828	2504	217	-10	165	-8	1033	932	1198	924
		W Leg	3603	2999	3178	3722	-153	260	-116	198	1001	986	885	1184
		Total	7033	7033	7204	7204	62	62	47	47	2478	2478	2525	2525
5	Ponderosa St - @ Denny's	N Leg	0	0	0	0	0	0	0	0	22	33	22	33
		S Leg	0	0	0	0	0	0	0	0	107	22	107	22
		E Leg	4903	4360	6357	4907	523	197	398	150	1528	1521	1926	1671
		W Leg	3982	4999	4507	6439	189	518	144	394	1436	1517	1580	1911
		Total	8885	9359	10864	11346	712	715	541	544	3093	3093	3634	3637
6	dar St - SR55 @ On-Ramp	N Leg	2332	0	2618	0	103	0	78	0	395	0	473	0
		S Leg	0	1571	0	1783	0	76	0	58	0	904	0	962
		E Leg	3385	3601	5105	4490	619	320	471	243	1468	932	1939	1175
		W Leg	4360	4905	4907	6357	197	523	150	397	1514	1541	1664	1938
		Total	10077	10077	12630	12630	919	919	699	699	3377	3377	4076	4076
7	55 SB Off-Ramp @ 17th St	N Leg	0	0	0	0	0	0	0	0	0	0	0	0
		S Leg	2392	0	2805	0	149	0	113	0	666	0	779	0
		E Leg	3385	5994	5105	7295	619	468	471	356	1468	1598	1939	1954
		W Leg	3602	3385	4490	5105	320	619	243	471	932	1468	1175	1939
		Total	9379	9379	12400	12400	1088	1088	827	827	3066	3066	3893	3893
8	55 NB On-Ramp @ 17th St	N Leg	0	0	0	0	0	0	0	0	0	0	0	0
		S Leg	0	1245	0	1592	0	125	0	95	0	309	0	404
		E Leg	3385	4749	5105	5703	619	343	471	261	1410	1299	1881	1560
		W Leg	5994	3385	7295	5105	468	619	356	471	1608	1410	1964	1881
		Total	9379	9379	12400	12400	1088	1088	827	827	3018	3018	3845	3845
9	s Café - SR55 @ Ramps	N Leg	0	1924	0	2208	0	102	0	78	0	754	0	832
		S Leg	1381	0	1365	0	-6	0	-4	0	711	0	707	0
		E Leg	4728	5549	6776	6531	737	354	560	269	1809	1655	2369	1924
		W Leg	4749	3385	5703	5105	343	619	261	471	1299	1410	1560	1880
		Total	10858	10858	13844	13844	1075	1075	817	817	3819	3819	4635	4635
10	roll Wy - Yorba @ 17th St	N Leg	0	0	0	0	0	0	0	0	193	122	193	122
		S Leg	18	614	31	1406	5	285	4	217	173	410	177	627
		E Leg	4911	5137	6922	5302	724	59	550	45	1692	1397	2242	1442
		W Leg	5550	4728	6531	6776	353	737	268	560	1656	1785	1924	2345
		Total	10479	10479	13484	13484	1082	1082	822	822	3714	3714	4536	4536
11	rba St - Ender @ Center Dr	N Leg	2040	880	2733	1026	249	53	190	40	770	194	960	234
		S Leg	0	0	0	0	0	0	0	0	72	343	72	343
		E Leg	3930	5316	5554	5640	585	117	444	89	1492	1549	1936	1638
		W Leg	5137	4911	5301	6922	59	724	45	550	1441	1689	1486	2239
		Total	11107	11107	13588	13588	893	893	679	679	3775	3775	4454	4454
12	Yorba St @ Vandenberg Ln	N Leg	614	18	1406	31	285	5	217	4	373	151	590	155
		S Leg	18	614	31	1406	5	285	4	217	145	612	149	829
		E Leg	0	0	0	0	0	0	0	0	305	59	305	59
		W Leg	0	0	0	0	0	0	0	0	1	2	1	2
		Total	632	632	1437	1437	290	290	220	220	824	824	1044	1044
13	Tustin Ave @ Proj Dwy - Annie's	N Leg	4699	624	4170	871	-190	89	-145	68	2336	527	2191	595
		S Leg	624	4699	871	4170	89	-190	68	-145	528	2345	596	2200
		E Leg	0	0	0	0	0	0	0	0	0	0	0	0
		W Leg	0	0	0	0	0	0	0	0	18	10	18	10
		Total	5323	5323	5041	5041	-102	-102	-77	-77	2882	2882	2805	2805
14	Tustin Ave @ th Proj Dwy - 7-Ele	N Leg	4699	624	4170	871	-190	89	-145	68	2338	526	2193	594
		S Leg	624	4699	871	4170	89	-190	68	-145	527	2340	595	2195
		E Leg	0	0	0	0	0	0	0	0	0	0	0	0
		W Leg	0	0	0	0	0	0	0	0	33	32	33	32
		Total	5323	5323	5041	5041	-102	-102	-77	-77	2898	2898	2821	2821
15	Ponderosa St @ Proj Dwy	N Leg	0	0	0	0	0	0	0	0	22	33	22	33
		S Leg	0	0	0	0	0	0	0	0	33	22	33	22
		E Leg	0	0	0	0	0	0	0	0	0	0	0	0
		W Leg	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	55	55	55	55
16	Tustin Ave @ Catalina Ave	N Leg	4699	624	4170	871	-190	89	-145	68	2975	549	2830	617
		S Leg	624	4699	871	4170	89	-190	68	-145	501	2947	569	2802
		E Leg	0	0	0	0	0	0	0	0	62	48	62	48
		W Leg	0	0	0	0	0	0	0	0	47	41	47	41
		Total	5323	5323	5041	5041	-102	-102	-77	-77	3585	3585	3508	3508

Postprocessing - Weekday PM

Location (Interesection)			Link (leg)	Peak Period Volume (vph)				Diff *	0.27	Peak Hour Volume (vph)					
				Base Year		Future Year				Calib Adj Yr		Existing Count		Fut (Exist+Growth)	
				2010		2035				6		25		2016	
				IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
1	Tustin Ave @ Santa Clara Ave	N Leg	2042	5792	1805	4413	-64	-372	-49	-283	1167	1854	1118	1571	
			S Leg	4908	1652	3741	1471	-315	-49	-239	-37	1889	1100	1650	1063
			E Leg	547	214	667	447	32	63	25	48	437	479	462	527
			W Leg	394	233	513	395	32	44	24	33	445	505	469	538
			Total	7891	7891	6726	6726	-315	-315	-239	-239	3938	3938	3699	3699
2	Tustin Ave @ 17th St	N Leg	1652	4908	1471	3741	-49	-315	-37	-239	936	1982	899	1743	
			S Leg	3675	476	3248	976	-115	135	-88	103	2067	801	1979	904
			E Leg	5703	6458	6756	7313	284	231	216	175	1579	1932	1795	2107
			W Leg	5515	4703	5833	5278	86	155	65	118	1462	1329	1527	1447
			Total	16545	16545	17308	17308	206	206	157	157	6044	6044	6201	6201
3	Tustin Ave @ Tustin Centre	N Leg	476	3675	976	3248	135	-115	103	-88	734	1790	837	1702	
			S Leg	3675	476	3248	976	-115	135	-88	103	1675	647	1587	750
			E Leg	0	0	0	0	0	0	0	0	282	174	282	174
			W Leg	0	0	0	0	0	0	0	0	132	212	132	212
			Total	4151	4151	4224	4224	20	20	15	15	2823	2823	2838	2838
4	erry Ln - Cabrillo Park Ave @ 17th St	N Leg	0	0	0	0	0	0	0	0	234	230	234	230	
			S Leg	1055	425	679	376	-102	-13	-77	-10	557	284	480	274
			E Leg	4207	3912	4647	4106	119	52	90	40	1385	1233	1475	1273
			W Leg	3683	4608	4016	4860	90	68	68	52	1099	1528	1167	1580
			Total	8945	8945	9342	9342	107	107	81	81	3275	3275	3356	3356
5	Ponderosa St - Denny's @ 17th St	N Leg	0	0	0	0	0	0	0	0	36	76	36	76	
			S Leg	0	0	0	0	0	0	0	0	11	213	11	213
			E Leg	6098	6493	7186	7361	294	234	223	178	1633	1758	1856	1936
			W Leg	6458	5703	7313	6756	231	284	175	216	1960	1593	2135	1809
			Total	12556	12196	14499	14117	525	519	399	394	3640	3640	4039	4034
6	adar St - SR55 On-Ramp @ 17th St	N Leg	2106	0	2831	0	196	0	149	0	435	0	584	0	
			S Leg	0	2031	0	2245	0	58	0	44	0	914	0	958
			E Leg	4941	5411	5584	6344	174	252	132	191	1547	1164	1679	1355
			W Leg	6493	6098	7361	7187	234	294	178	223	1678	1582	1856	1805
			Total	13540	13540	15776	15776	604	604	459	459	3660	3660	4119	4119
7	55 SB Off-Ramp @ 17th St	N Leg	0	0	0	0	0	0	0	0	0	0	0	0	
			S Leg	2910	0	3755	0	228	0	173	0	767	0	940	0
			E Leg	4941	8322	5584	10099	174	480	132	365	1547	1931	1679	2296
			W Leg	5412	4941	6344	5584	252	174	191	132	1164	1547	1355	1679
			Total	13263	13263	15683	15683	653	653	497	497	3478	3478	3975	3975
8	55 NB On-Ramp @ 17th St	N Leg	0	0	0	0	0	0	0	0	0	0	0	0	
			S Leg	0	2474	0	2501	0	7	0	6	0	486	0	492
			E Leg	4941	5847	5584	7598	174	473	132	359	1533	1387	1665	1746
			W Leg	8322	4942	10099	5584	480	173	365	132	1873	1533	2238	1665
			Total	13263	13263	15683	15683	653	653	497	497	3406	3406	3903	3903
9	s Café - SR55 Ramps @ 17th St	N Leg	0	2676	0	2998	0	87	0	66	0	850	0	916	
			S Leg	2405	0	2473	0	18	0	14	0	627	0	641	0
			E Leg	6834	7469	7781	9269	256	486	194	369	1955	1586	2149	1955
			W Leg	5847	4941	7598	5585	473	174	359	132	1387	1533	1746	1665
			Total	15086	15086	17852	17852	747	747	568	568	3969	3969	4537	4537
10	roll Wy - Yorba @ 17th St	N Leg	0	0	0	0	0	0	0	0	261	241	261	241	
			S Leg	898	36	719	144	-48	29	-37	22	498	252	461	274
			E Leg	6678	8174	7561	9626	238	392	181	298	1575	1470	1756	1768
			W Leg	7469	6835	9271	7781	487	255	370	194	1585	1956	1955	2150
			Total	15045	15045	17551	17551	677	677	514	514	3919	3919	4433	4433
11	rba St - Ender Center Dr @ 17th St	N Leg	1081	2819	1778	2845	188	7	143	5	293	560	436	565	
			S Leg	0	0	0	0	0	0	0	0	273	174	273	174
			E Leg	6471	6229	7214	8211	201	535	152	407	1641	1301	1793	1708
			W Leg	8174	6678	9626	7562	392	239	298	181	1428	1600	1726	1781
			Total	15726	15726	18618	18618	781	781	593	593	3635	3635	4228	4228
12	Yorba St @ Vandenberg Ln	N Leg	36	898	144	719	29	-48	22	-37	198	449	220	412	
			S Leg	898	36	719	144	-48	29	-37	22	452	231	415	253
			E Leg	0	0	0	0	0	0	0	0	177	146	177	146
			W Leg	0	0	0	0	0	0	0	0	3	4	3	4
			Total	934	934	863	863	-19	-19	-15	-15	830	830	815	815
13	Tustin Ave @ Proj Dwy - Annie's	N Leg	1652	4908	1471	3741	-49	-315	-37	-239	899	1954	862	1715	
			S Leg	4908	1652	3741	1471	-315	-49	-239	-37	1955	902	1716	865
			E Leg	0	0	0	0	0	0	0	0	0	0	0	0
			W Leg	0	0	0	0	0	0	0	0	9	7	9	7
			Total	6560	6560	5212	5212	-364	-364	-277	-277	2863	2863	2586	2586
14	Tustin Ave @ th Proj Dwy - 7-Ele	N Leg	1652	4908	1471	3741	-49	-315	-37	-239	905	1953	868	1714	
			S Leg	4908	1652	3741	1471	-315	-49	-239	-37	1943	918	1704	881
			E Leg	0	0	0	0	0	0	0	0	0	0	0	0
			W Leg	0	0	0	0	0	0	0	0	66	43	66	43
			Total	6560	6560	5212	5212	-364	-364	-277	-277	2914	2914	2637	2637
15	Ponderosa St @ Proj Dwy	N Leg	0	0	0	0	0	0	0	0	36	76	36	76	
			S Leg	0	0	0	0	0	0	0	0	76	36	76	36
			E Leg	0	0	0	0	0	0	0	0	0	0	0	0
			W Leg	0	0	0	0	0	0	0	0	0	0	0	0
			Total	0	0	0	0	0	0	0	0	112	112	112	112
16	Tustin Ave @ Catalina Ave	N Leg	1652	4908	1471	3741	-49	-315	-37	-239	1477	2006	1440	1767	
			S Leg	4908	1652	3741	1471	-315	-49	-239	-37	2001	1415	1762	1378
			E Leg	0	0	0	0	0	0	0	0	56	62	56	62
			W Leg	0	0	0	0	0	0	0	0	42	93	42	93
			Total	6560	6560	5212	5212	-364	-364	-277	-277	3576	3576	3299	3299

MD based on PM Growth

Roadway	Link	Eastbound					Westbound				
		2010	2035	GF	2016-2035 GF	Use	2010	2035	GF	2016-2035 GF	Use
17th Street	W/ of Cabrillo	3683	4016	1.0904	1.1439	1.15	4606	4858	1.0547	1.0955	1.1
	Between Cabrillo and Tustin	5515	5831	1.0573			4703	5278	1.1223		
	Tustin and SB Ramps	6493	7361	1.1337			6098	7186	1.1784		
	Between SB slip and loop Ramps	5410	6344	1.1726			4941	5584	1.1301		
	Between Loop Ramps	8322	10099	1.2135			4941	5584	1.1301		
	Between NB loop and Slip ramps	5847	7598	1.2995			4941	5584	1.1301		
	Between NB ramps and Yorba St	7469	9269	1.2410			6834	7781	1.1386		
	Between Yorba Street	8174	9626	1.1776			6678	7561	1.1322		
	East of Yorba Street	6229	8211	1.3182			6471	7214	1.1148		

Roadway	Link	Southbound					Northbound				
		2010	2035	GF	2016-2035 GF	Use	2010	2035	GF	2016-2035 GF	Use
Tustin	N/ of Santa Clara	2042	1805	0.8839	1.2089	1.1	5792	4413	0.7619	0.850013353	1.1
	Santa Clara to 17th	1652	1471	0.8904			4908	3741	0.7622		
	S/o 17th	476	976	2.0504			3675	3248	0.8838		

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

Tustin Ave / Santa Clara Ave																
Adj.	↓	1,280	9.8%	PM						PM	9.8%	2,050	↑	DATE		
	Flow	↓	3,080	11.2%	AM					AM	11.2%	700	↑	Flow		
←	←	Origin	ADT	33,900	PM	100	990	190		PM	33,900	ADT	Origin	←	←	
560	390	ADT			AM	100	2,860	120		AM			ADT	480	490	
9.8%	9.7%	10,800			PM	100	990	190		PM			10,400	10.0%	9.8%	
PM	AM	PM	AM		PM	AM	100	2,860	120	AM	PM	AM	PM	AM	PM	
							↔	↓	↔							
		160	110			160	110	↑	SB		↑	120	160			
		200	320			200	320	↔	EB	1	WB	↔	220	250		
		140	230			140	230	↓	NB		↓	140	80			
							↔	↑	↔							
PM	AM	PM	AM		PM	AM	70	470	120	AM	PM	AM	PM	AM	PM	
9.8%	9.7%	10,800					PM	210	1,730	140	PM	AM	PM	10,400	10.0%	9.8%
500	660	ADT			AM	70	470	120		AM			ADT	560	530	
⇒	⇒	Origin	ADT	29,856	PM	210	1,730	140		PM	29,856	ADT	Origin	⇒	⇒	
Adj.	↓	1,210	11.0%	PM						PM	11.0%	2,080	↑	Flow	Adj.	

Tustin Ave / 17th St																
Adj.	↓	1,050	10.8%	PM						PM	10.8%	2,180	↑	DATE		
	Flow	↓	2,580	10.9%	AM					AM	10.9%	660	↑	Flow		
←	←	Origin	ADT	29,856	PM	50	490	500		PM	29,856	ADT	Origin	←	←	
1,520	1,110	ADT			AM	25	1,950	600		AM			ADT	1,810	1,840	
9.3%	6.5%	33,946			PM	60	490	500		PM			42,231	8.1%	9.5%	
PM	AM	PM	AM		PM	AM	30	1,950	600	AM	PM	AM	PM	AM	PM	
							↔	↓	↔							
		460	200			460	200	↑	SB		↑	250	410			
		1,030	760			1,030	760	↔	EB	2	WB	↔	960	1,110		
		150	150			150	150	↓	NB		↓	600	320			
							↔	↑	↔							
PM	AM	PM	AM		PM	AM	120	210	260	AM	PM	AM	PM	AM	PM	
9.3%	6.5%	33,946					PM	350	1,310	650	PM	AM	PM	42,231	8.1%	9.5%
1,640	1,110	ADT			AM	120	210	260		AM			ADT	1,620	2,180	
⇒	⇒	Origin	ADT	33,300	PM	350	1,310	650		PM	33,300	ADT	Origin	⇒	⇒	
Adj.	↓	960	9.8%	PM						PM	9.8%	2,310	↑	Flow	Adj.	

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

Tustin Ave / Tustin Centre															
Adj.	↓	890	9.8%	PM						PM	9.8%	2,060	↑	DATE	
	Flow	↓	2,680	10.8%	AM					AM	10.8%	550	↑	Flow	
↔	↔	Origin	ADT	30,000	PM	120	660	110		PM	30,000	ADT	Origin	↔	↔
240	130	ADT			AM	80	2,370	230		AM			ADT	80	320
9.9%	6.9%	3,900			PM	120	660	110		PM			5,200	9.0%	9.9%
PM	AM	PM	AM		PM	AM	80	2,370	230	AM	PM	AM	PM	AM	PM
							↔	↓	↔						
		70	30			70	30	↑	SB		40	240	40	240	
		5	20			5	20	↔	EB	3	WB	↔	10	20	
		70	90			70	90	↓	NB		↔	30	60	30	60
							↔	↑	↔						
PM	AM	PM	AM		PM	AM	40	480	140	AM	PM	AM	PM	AM	PM
9.9%	6.9%	3,900					PM	100	1,750	80	PM		5,200	9.0%	9.9%
145	140	ADT			AM	40	480	140		AM			ADT	390	195
⇒	⇒	Origin	ADT	27,700	PM	100	1,750	80		PM	27,700	ADT	Origin	⇒	⇒
	Flow	↓	2,490	11.4%	AM					AM	11.4%	660	↑	Flow	
Adj.	↓	790	9.8%	PM						PM	9.8%	1,930	↑	Adj.	

Sherry Ln - Cabrillo Park Ave / 17th St															
Adj.	↓	260	9.8%	PM						PM	9.8%	260	↑	DATE	
	Flow	↓	230	6.0%	AM					AM	6.0%	90	↑	Flow	
↔	↔	Origin	ADT	5,300	PM	50	70	140		PM	5,300	ADT	Origin	↔	↔
1,710	1,195	ADT			AM	30	100	100		AM			ADT	1,245	1,565
9.9%	7.6%	30,300			PM	50	70	140		PM			33,946	6.8%	8.8%
PM	AM	PM	AM		PM	AM	30	100	100	AM	PM	AM	PM	AM	PM
							↔	↓	↔						
		50	15			50	15	↑	SB		35	70	35	70	
		1,110	850			1,110	850	↔	EB	4	WB	↔	1,030	1,350	
		110	240			115	240	↓	NB		↔	180	145	180	140
							↔	↑	↔						
PM	AM	PM	AM		PM	AM	135	40	100	AM	PM	AM	PM	AM	PM
9.9%	7.6%	30,300					PM	310	140	160	PM		33,946	6.8%	8.8%
1,275	1,105	ADT			AM	130	40	90		AM			ADT	1,050	1,410
⇒	⇒	Origin	ADT	9,500	PM	310	140	160		PM	9,500	ADT	Origin	⇒	⇒
	Flow	↓	520	8.4%	AM		5	10		AM	8.4%	275	↑	Flow	
Adj.	↓	330	9.9%	PM						PM	9.9%	610	↑	Adj.	

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

Ponderosa St - Denny's / 17th St														
Adj.	↓	40	10.0%	PM						PM	10.0%	80	↑	DATE
	Flow	↓	25	5.4%	AM					AM	5.4%	40	↑	Flow
↔	↔	Origin	ADT	1,200	PM	40	0	0		PM	1,200	ADT	Origin	↔
1,820	1,825	ADT			AM	25	0	0		AM			ADT	1,840
9.5%	8.2%	42,231			PM	40	0	0		PM		42,231		8.4%
PM	AM	PM	AM		PM	AM	25	0	0	AM	PM	AM	PM	9.1%
							↔	↓	↔					
		0	0			0	0	↑	SB		↑	40	80	
		1,970	1,600			1,970	1,600	↔	EB	5	WB	↔	1,800	1,780
		230	25			230	25	↓		NB		↓	0	0
								↔		↑		↔		
PM	AM	PM	AM			PM	AM	0	0	120	AM	PM	AM	PM
9.5%	8.2%	42,231											42,231	8.4%
2,200	1,625	ADT											ADT	1,720
		Origin	ADT	2,500	PM	0	0	15		PM	2,500	ADT	Origin	↔
	Flow	↓	25	5.8%	AM					AM	5.8%	120	↑	Flow
Adj.	↓	230	9.8%	PM						PM	9.8%	15	↑	Adj.

Deodar St - SR55 SB On-Ramp / 17th St														
Adj.	↓	75	9.8%	PM						PM	9.8%	120	↑	DATE
	Flow	↓	325	19.8%	AM					AM	19.8%	70	↑	Flow
↔	↔	Origin	ADT	2,000	PM	15	45	15		PM	2,000	ADT	Origin	↔
1,785	1,845	ADT			AM	25	250	50		AM			ADT	2,300
8.9%	8.5%	42,231			PM	15	45	15		PM		37,000		9.2%
PM	AM	PM	AM		PM	AM	25	250	50	AM	PM	AM	PM	9.7%
							↔	↓	↔					
		50	20			50	20	↑		SB		↑	50	70
		1,340	1,070			1,290	1,070	↔	EB	6	WB	↔	1,820	1,770
		570	640			620	640	↓		NB		↓	430	440
								↔		↑		↔		
PM	AM	PM	AM			PM	AM	0	0	0	AM	PM	AM	PM
8.9%	8.5%	42,231											37,000	9.2%
1,960	1,730	ADT											ADT	1,120
		Origin	ADT	10,700	PM	0	0	0		PM	10,700	ADT	Origin	↔
	Flow	↓	1,320	12.3%	AM					AM	12.3%	0	↑	Flow
Adj.	↓	1,105	10.3%	PM						PM	10.3%	0	↑	Adj.

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

SR55 SB Off-Ramps / 17th St														
Adj.	↓	580	9.8%	PM						PM	9.8%	0	↑	DATE
	Flow	↓	620	10.5%	AM		150			AM	10.5%	0	↑	Flow
↔	↔	Origin	ADT	5,900	PM	580	0	0		PM	5,900	ADT	Origin	↔
2,280	2,300	ADT			AM	470	0	0		AM			ADT	1,680
9.7%	9.2%	37,000			PM	580	0	0		PM			37,000	9.7%
PM	AM	PM	AM		PM	AM	620	0	0	AM	PM	AM	PM	PM
		0	0		0	0	↑	SB	↑	0	0		0	
-50		1,350	1,120		1,300	1,120	⇒	EB	7	WB	⇐	1,680	1,700	-150
		0	0		0	0	↓	NB	↓	0	0		0	
							⇐	↑	⇒					
PM	AM	PM	AM		PM	AM	0	0	780	AM	PM	AM	PM	PM
9.7%	9.2%	37,000							840				37,000	9.7%
1,300	1,120	ADT			AM	0	0	780		AM			ADT	1,900
⇒	⇒	Origin	ADT	9,600	PM	0	0	940		PM	9,600	ADT	Origin	⇒
	Flow	↓	0	8.1%	AM					AM	8.1%	780	↑	Flow
Adj.	↓	0	8.8%	PM						PM	8.8%	840	↑	Adj.

SR55 NB On-Ramps / 17th St														
Adj.	↓	0	9.8%	PM						PM	9.8%	910	↑	DATE
	Flow	↓	0	8.7%	AM					AM	8.7%	810	↑	Flow
↔	↔	Origin	ADT	9,300	PM	0	0	0		PM	9,300	ADT	Origin	↔
1,700	1,680	ADT			AM	0	0	0		AM			ADT	2,490
8.6%	8.0%	44,800			PM	0	0	0		PM			44,800	8.9%
PM	AM	PM	AM		PM	AM	0	0	0	AM	PM	AM	PM	PM
		0	0		0	0	↑	SB	↑	810	910	810	910	
-150		1,760	1,500		1,610	1,500	⇒	EB	8	WB	⇐	1,680	1,700	-150
		530	400		530	400	↓	NB	↓	0	0		0	
							⇐	↑	⇒					
PM	AM	PM	AM		PM	AM	0	0	0	AM	PM	AM	PM	PM
8.6%	8.0%	44,800							0				44,800	8.9%
2,140	1,900	ADT			AM	0	0	0		AM			ADT	1,500
⇒	⇒	Origin	ADT	5,400	PM	0	0	0		PM	5,400	ADT	Origin	⇒
	Flow	↓	400	7.4%	AM					AM	7.4%	0	↑	Flow
Adj.	↓	530	9.8%	PM						PM	9.8%	0	↑	Adj.

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

Yorba St - Enderle Center Dr / 17th St														
Adj.	↓	440	9.8%	PM						PM	9.8%	620	↑	DATE
	Flow	↓	980	11.3%	AM					AM	11.3%	235	↑	Flow
↔	↔	Origin	ADT	10,800	PM	210	90	140		PM	10,800	ADT	Origin	↔
1,740	1,945	ADT			AM	390	290	300		AM			ADT	1,660
8.8%	9.3%	37,795			PM	210	90	140		PM			34,500	9.8%
PM	AM	PM	AM		PM	AM	390	290	300	AM	PM	AM	PM	PM
							↔	↓	↔					
		210	120			210	120	↑			80	230	80	230
		1,480	1,400			1,330	1,400	↔	EB	11	WB	↔	1,530	1,440
		50	40			50	40	↓		NB		↓	50	60
							↔	↑	↔					
PM	AM	PM	AM			PM	AM	25	35	25	AM	PM	AM	PM
8.8%	9.3%	37,795											34,500	9.8%
1,590	1,560	ADT											ADT	1,725
⇒	⇒	Origin	ADT	5,200	PM	90	180	40		PM	5,200	ADT	Origin	⇒
	Flow	↓	380	8.9%	AM					AM	8.9%	85	↑	Flow
Adj.	↓	200	9.8%	PM						PM	9.8%	310	↑	Adj.

Yorba St / Vandenberg Ln														
Adj.	↓	225	9.9%	PM						PM	9.9%	505	↑	DATE
	Flow	↓	525	9.4%	AM					AM	9.4%	170	↑	Flow
↔	↔	Origin	ADT	7,400	PM	5	190	30		PM	7,400	ADT	Origin	↔
10	5	ADT			AM	5	500	20		AM			ADT	340
10.0%	5.0%	200			PM	5	190	30		PM			3,700	11.2%
PM	AM	PM	AM		PM	AM	5	500	20	AM	PM	AM	PM	PM
							↔	↓	↔					
		5	0			5	0	↑		SB		↑	60	130
		5	5			5	5	↔	EB	12	WB	↔	0	0
		0	0			0	0	↓		NB		↓	280	70
							↔	↑	↔					
PM	AM	PM	AM			PM	AM	0	110	50	AM	PM	AM	PM
10.0%	5.0%	200											3,700	11.2%
10	5	ADT											ADT	75
⇒	⇒	Origin	ADT	7,800	PM	5	370	130		PM	7,800	ADT	Origin	⇒
	Flow	↓	780	12.1%	AM					AM	12.1%	160	↑	Flow
Adj.	↓	260	9.8%	PM						PM	9.8%	505	↑	Adj.

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

Tustin Ave / North Proj Dwy - Annie's Salon														
Adj.	↓	1,005	10.6%	PM					PM	10.6%	2,145	↑	DATE	
	Flow	↓	2,570	10.6%	AM				AM	10.6%	590	↑	Flow	
↔	↔	Origin	ADT	29,856	PM	5	1,000	0	PM	29,856	ADT	Origin	↔	↔
15	12	ADT			AM	10	2,560	0	AM			ADT	0	0
10.0%	10.7%	300			PM	5	1,000	0	PM			0	#DIV/0!	#DIV/0!
PM	AM	PM	AM	PM	AM	10	2,560	0	AM	PM	AM	PM	AM	PM
		5	0	5	0	↕	↕	↕	0	0	0	0		
		0	0	0	0	↔	↔	↔	0	0	0	0		
		10	20	10	20	↕	↕	↕	0	0	0	0		
						↔	↔	↔	0	0	0	0		
PM	AM	PM	AM	PM	AM	2	590	0	AM	PM	AM	PM	AM	PM
10.0%	10.7%	300			PM	10	2,140	0	PM			0	#DIV/0!	#DIV/0!
15	20	ADT			AM	0	590	0	AM			ADT	0	0
⇒	⇒	Origin	ADT	29,856	PM	10	2,140	0	PM	29,856	ADT	Origin	⇒	⇒
Adj.	↓	1,010	10.6%	PM					PM	10.6%	2,150	↑	Flow	Adj.

Tustin Ave / South Proj Dwy - 7-Eleven														
Adj.	↓	1,010	10.6%	PM					PM	10.6%	2,150	↑	DATE	
	Flow	↓	2,575	10.6%	AM				AM	10.6%	590	↑	Flow	
↔	↔	Origin	ADT	29,856	PM	40	970	0	PM	29,856	ADT	Origin	↔	↔
50	37	ADT			AM	35	2,540	0	AM			ADT	0	0
10.0%	6.4%	1,200			PM	40	970	0	PM			0	#DIV/0!	#DIV/0!
PM	AM	PM	AM	PM	AM	35	2,540	0	AM	PM	AM	PM	AM	PM
		20	0	20	0	↕	↕	↕	0	0	0	0		
		0	0	0	0	↔	↔	↔	0	0	0	0		
		50	40	50	40	↕	↕	↕	0	0	0	0		
						↔	↔	↔	0	0	0	0		
PM	AM	PM	AM	PM	AM	2	590	0	AM	PM	AM	PM	AM	PM
10.0%	6.4%	1,200			PM	10	2,130	0	PM			0	#DIV/0!	#DIV/0!
70	40	ADT			AM	0	590	0	AM			ADT	0	0
⇒	⇒	Origin	ADT	29,856	PM	10	2,130	0	PM	29,856	ADT	Origin	⇒	⇒
Adj.	↓	1,020	10.6%	PM					PM	10.6%	2,140	↑	Flow	Adj.

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

Ponderosa St / Proj Dwy														
Adj.	↓	40	10.0%	PM					PM	10.0%	80	↑	DATE	
	Flow	↓	25	5.4%	AM					AM	5.4%	40	↑	Flow
↔	↔	Origin	ADT	1,200	PM	0	40	0	PM	1,200	ADT	Origin	↔	↔
0	0	ADT			AM	0	25	0	AM			ADT	0	0
#DIV/0!	#DIV/0!	0			PM	0	40	0	PM			0	#DIV/0!	#DIV/0!
PM	AM	PM	AM		PM	AM	0	25	0	AM	PM	AM	PM	
		0	0		0	0	↑	↓	↔	0	0	0	0	
		0	0		0	0	⇒	EB	15	WB	↔	0	0	
		0	0		0	0	↓				↓	0	0	
							↔	↑	↔					
PM	AM	PM	AM		PM	AM	0	40	0	AM	PM	AM	PM	
#DIV/0!	#DIV/0!	0			0							0	#DIV/0!	#DIV/0!
0	0	ADT			AM	0	40	0	AM			ADT	0	0
⇒	⇒	Origin	ADT	1,200	PM	0	80	0	PM	1,200	ADT	Origin	⇒	⇒
Adj.	↓	40	10.0%	PM					PM	10.0%	80	↑	Adj.	

Forecasted Intersection Traffic Volumes 2035nP_AM_PM

Tustin Ave / Catalina Ave														
Adj.	↓	1,125	11.2%	PM		-500			PM	11.2%	2,215	↑	DATE	
Flow	↓	3,030	12.2%	AM		-250			AM	12.2%	620	↑	Flow	
←	←	Origin	ADT	29,856	PM	50	1,530	45	PM	29,856	ADT	Origin	←	←
105	50	ADT			AM	30	3,210	40	AM			ADT	65	70
9.7%	6.3%	1,600			PM	50	1,030	45	PM			1,400	8.6%	10.0%
PM	AM	PM	AM	PM	AM	30	2,960	40	AM	PM	AM	PM	AM	PM
		25	20	25	20	↑	SB		↑	60	60	60		
		0	0	0	0	⇒	EB	16	WB	⇒	0	5	0	5
		25	30	25	30	↓	NB		↓	5	5	5		
						←	↑		⇒					
PM	AM	PM	AM	PM	AM	20	540	15	AM	PM	AM	PM	AM	PM
9.7%	6.3%	1,600				50	2,130	25	PM			1,400	8.6%	10.0%
50	50	ADT			AM	20	540	15	AM			ADT	55	70
⇒	⇒	Origin	ADT	29,856	PM	50	2,130	25	PM	29,856	ADT	Origin	⇒	⇒
Flow	↓	2,995	12.0%	AM					AM	12.0%	575	↑	Flow	
Adj.	↓	1,060	10.9%	PM					PM	10.9%	2,205	↑	Adj.	

Forecasted Intersection Traffic Volumes 2035nP_MD

Tustin Ave / Santa Clara Ave															
Adj.	↓	1,280	9.8%	PM						PM	9.8%	2,050	↑	DATE	
	Flow	↓	1,229	6.8%	MD					MD	6.8%	1,095	↑	Flow	
↔	↔	Origin	ADT	34,100	PM	100	990	190		PM	34,100	ADT	Origin	↔	↔
560	380	ADT			MD	102	988	139		MD			ADT	330	490
9.8%	7.7%	10,800											10,400	6.9%	9.8%
PM	MD	PM	MD	PM	MD	102	988	139		MD	PM	MD	PM	MD	PM
						↔	↓	↔							
		160	154	160	154	↑	SB	↑	123	160	123	160			
		200	141	200	141	↔	EB	1	WB	↔	126	250	126	250	
		140	157	140	157	↓	NB	↓	81	80	81	80			
						↔	↑	↔							
PM	MD	PM	MD	PM	MD	152	818	112		MD	PM	MD	PM	MD	PM
9.8%	7.7%	10,800				210	1,730	140		PM		10,400	6.9%	9.8%	
500	452	ADT				152	818	112		MD			ADT	392	530
⇒	⇒	Origin	ADT	29,856	PM	210	1,730	140		PM	29,856	ADT	Origin	⇒	⇒
	Flow	↓	1,226	7.7%	MD					MD	7.7%	1,082	↑	Flow	
Adj.	↓	1,210	11.0%	PM						PM	11.0%	2,080	↑	Adj.	

Tustin Ave / 17th St															
Adj.	↓	1,050	10.8%	PM						PM	10.8%	2,180	↑	DATE	
	Flow	↓	972	7.2%	MD					MD	7.2%	1,179	↑	Flow	
↔	↔	Origin	ADT	29,856	PM	60	490	500		PM	29,856	ADT	Origin	↔	↔
1,520	1,018	ADT			MD	55	367	535		MD			ADT	1,437	1,840
9.3%	7.4%	33,946											42,231	7.2%	9.5%
PM	MD	PM	MD	PM	MD	70	367	535		MD	PM	MD	PM	MD	PM
						↔	↓	↔							
		460	470	460	470	↑	SB	↑	407	410	407	410			
		1,030	889	1,030	889	↔	EB	2	WB	↔	755	1,110	755	1,110	
		150	127	150	137	↓	NB	↓	275	320	275	320			
						↔	↑	↔							
PM	MD	PM	MD	PM	MD	193	302	186		MD	PM	MD	PM	MD	PM
9.3%	7.4%	33,946				350	1,310	650		PM		42,231	7.2%	9.5%	
1,640	1,496	ADT				193	302	186		MD			ADT	1,610	2,180
⇒	⇒	Origin	ADT	33,400	PM	350	1,310	650		PM	33,400	ADT	Origin	⇒	⇒
	Flow	↓	779	4.4%	MD					MD	4.4%	681	↑	Flow	
Adj.	↓	960	9.8%	PM						PM	9.8%	2,310	↑	Adj.	

Forecasted Intersection Traffic Volumes 2035nP_MD

Tustin Ave / Tustin Centre															
Adj.	↓	890	9.8%	PM						PM	9.8%	2,060	↑	DATE	
	Flow	↓	770	4.7%	MD					MD	4.7%	638	↑	Flow	
↔	↔	Origin	ADT	30,200	PM	120	660	110		PM	30,200	ADT	Origin	↔	↔
240	254	ADT			MD	148	504	108		MD			ADT	↔	↔
9.9%	10.0%	3,900			PM	120	660	110		PM			5,300	4.5%	9.7%
PM	MD	PM	MD		PM	MD	148	514	108	MD	PM	MD	PM	MD	PM
		70	59		70	59	↑	SB		↑	66	240	66	240	
		5	5		5	5	⇒	EB	3	WB	←	15	20	15	20
		70	73		70	73	↓	NB		↓	16	60	16	60	
							↔		↑	↔					
PM	MD	PM	MD		PM	MD				MD	PM	MD	PM	MD	PM
9.9%	10.0%	3,900			PM	MD				MD	PM		5,300	4.5%	9.7%
145	137	ADT			MD					MD			ADT	↔	↔
⇒	⇒	Origin	ADT	27,800	PM	100	1,750	80		PM	27,800	ADT	Origin	⇒	⇒
Adj.	↓	790	9.8%	PM						PM	9.8%	1,930	↑	Flow	Adj.

Sherry Ln - Cabrillo Park Ave / 17th St															
Adj.	↓	260	9.8%	PM						PM	9.8%	260	↑	DATE	
	Flow	↓	276	9.1%	MD					MD	9.1%	207	↑	Flow	
↔	↔	Origin	ADT	5,300	PM	50	70	140		PM	5,300	ADT	Origin	↔	↔
1,710	1,262	ADT			MD	73	77	126		MD			ADT	↔	↔
9.8%	8.1%	30,500			PM	50	70	140		PM			33,946	7.4%	8.8%
PM	MD	PM	MD		PM	MD	73	77	126	MD	PM	MD	PM	MD	PM
		50	61		50	61	↑	SB		↑	86	70	86	70	
		1,110	1,065		1,110	1,065	⇒	EB	4	WB	←	1,014	1,350	1,014	1,350
		115	92		115	97	↓	NB		↓	122	145	117	145	
							↔		↑	↔					
PM	MD	PM	MD		PM	MD				MD	PM	MD	PM	MD	PM
9.8%	8.1%	30,500			PM	MD				MD	PM		33,946	7.4%	8.8%
1,275	1,223	ADT			MD					MD			ADT	↔	↔
⇒	⇒	Origin	ADT	9,600	PM	310	140	160		PM	9,600	ADT	Origin	⇒	⇒
Adj.	↓	330	9.8%	PM						PM	9.8%	610	↑	Flow	Adj.

Forecasted Intersection Traffic Volumes 2035nP_MD

Ponderosa St - Denny's / 17th St																
Adj.	↓	40	10.0%	PM						PM	10.0%	80	↑	DATE		
	Flow	↓	49	9.1%	MD					MD	9.1%	60	↑	Flow		
↔	↔	Origin	ADT	1,200	PM	40	0	0		PM	1,200	ADT	Origin	↔	↔	
1,820	1,471	ADT			MD	49	0	0		MD			ADT	1,482	1,860	
9.5%	7.4%	42,231											42,231	7.2%	9.1%	
PM	MD	PM	MD	PM	MD	49	0	0		MD	PM	MD	PM	MD	PM	
		0	0	0	0	↑	SB	↑	60	80	60	80				
	-50	1,970	1,613	1,970	1,563	↔	EB	5	WB	↔	1,422	1,780	1,422	1,780		
	50	230	29	230	79	↓	NB	↓	0	0	0	0				
						↔	↑	↔								
PM	MD	PM	MD	PM	MD	0	0	16		MD			MD	PM	MD	PM
9.5%	7.4%	42,231				0	0	15		PM			42,231	7.2%	9.1%	
2,200	1,642	ADT				0	0	16		MD			ADT	1,579	1,985	
⇒	⇒	Origin	ADT	2,500	PM	0	0	15		PM	2,500	ADT	Origin	⇒	⇒	
	Flow	↓	79	3.8%	MD					MD	3.8%	16	↑	Flow		
Adj.	↓	230	9.8%	PM						PM	9.8%	15	↑		Adj.	

Deodar St - SR55 SB On-Ramp / 17th St																
Adj.	↓	75	9.8%	PM						PM	9.8%	120	↑	DATE		
	Flow	↓	77	8.9%	MD					MD	8.9%	100	↑	Flow		
↔	↔	Origin	ADT	2,000	PM	15	45	15		PM	2,000	ADT	Origin	↔	↔	
1,785	1,532	ADT			MD	14	31	32		MD			ADT	2,051	2,280	
8.9%	7.2%	42,231											36,700	8.3%	9.8%	
PM	MD	PM	MD	PM	MD	14	31	32		MD	PM	MD	PM	MD	PM	
		50	48	50	48	↑	SB	↑	52	70	52	70				
		1,290	963	1,290	963	↔	EB	6	WB	↔	1,518	1,770	1,518	1,770		
		620	492	620	492	↓	NB	↓	481	440	481	440				
						↔	↑	↔								
PM	MD	PM	MD	PM	MD	0	0	0		MD			MD	PM	MD	PM
8.9%	7.2%	42,231				0	0	0		PM			36,700	8.3%	9.8%	
1,960	1,503	ADT				0	0	0		MD			ADT	995	1,305	
⇒	⇒	Origin	ADT	11,300	PM	0	0	0		PM	11,300	ADT	Origin	⇒	⇒	
	Flow	↓	1,004	8.9%	MD					MD	8.9%	0	↑	Flow		
Adj.	↓	1,105	9.8%	PM						PM	9.8%	0	↑		Adj.	

Forecasted Intersection Traffic Volumes 2035nP_MD

SR55 SB Off-Ramps / 17th St															
Adj.	↓	580	9.8%	PM						PM	9.8%	0	↑	DATE	
	Flow	↓	457	7.7%	MD					MD	7.7%	0	↑	Flow	
↔	↔	Origin	ADT	5,900	PM	580	0	0		PM	5,900	ADT	Origin	↔	↔
2,280	2,051	ADT			MD	457	0	0		MD			ADT	1,594	1,700
9.8%	8.3%	36,700			PM	580	0	0		PM			36,700	8.9%	10.5%
PM	MD	PM	MD		PM	MD	457	0	0	MD	PM		MD	PM	MD
		0	0		0	0	↑	SB	↑	0	0		0		
		1,300	996		1,300	996	⇒	EB	7	WB	⇐	1,594	1,700		
		0	0		0	0	↓	NB	↓	0	0		0		
							⇐	↑	⇒						
PM	MD	PM	MD		PM	MD	0	0	693	MD	PM		MD	PM	MD
9.8%	8.3%	36,700			36,700				840				36,700	8.9%	10.5%
1,300	996	ADT			ADT				693				ADT	1,689	2,140
⇒	⇒	Origin	ADT	8,600	PM	0	0	840		PM	8,600	ADT	Origin	⇒	⇒
Adj.	↓	0	9.8%	PM						PM	9.8%	840	↑	Flow	Adj.

SR55 NB On-Ramps / 17th St															
Adj.	↓	0	9.8%	PM						PM	9.8%	910	↑	DATE	
	Flow	↓	0	5.7%	MD					MD	5.7%	534	↑	Flow	
↔	↔	Origin	ADT	9,300	PM	0	0	0		PM	9,300	ADT	Origin	↔	↔
1,700	1,594	ADT			MD	0	0	0		MD			ADT	2,128	2,610
8.8%	7.6%	43,500			PM	0	0	0		PM			43,500	7.9%	9.7%
PM	MD	PM	MD		PM	MD	0	0	0	MD	PM		MD	PM	MD
		0	0		0	0	↑	SB	↑	534	910		534	910	
		1,610	1,310		1,610	1,310	⇒	EB	8	WB	⇐	1,594	1,700		
		530	393		530	393	↓	NB	↓	0	0		0	0	
							⇐	↑	⇒						
PM	MD	PM	MD		PM	MD	0	0	0	MD	PM		MD	PM	MD
8.8%	7.6%	43,500			43,500				0				43,500	7.9%	9.7%
2,140	1,703	ADT			ADT				0				ADT	1,310	1,610
⇒	⇒	Origin	ADT	5,400	PM	0	0	0		PM	5,400	ADT	Origin	⇒	⇒
Adj.	↓	530	9.8%	PM						PM	9.8%	0	↑	Flow	Adj.

Forecasted Intersection Traffic Volumes 2035nP_MD

Mimi's Café - SR55 NB Ramps / 17th St															
Adj.	↓	115	9.8%	PM						PM	9.8%	140	↑	DATE	
	Flow	↓	125	10.3%	MD					MD	10.3%	144	↑	Flow	
↔	↔	Origin	ADT	2,600	PM	110	0	5		PM	2,600	ADT	Origin	↔	↔
2,640	2,089	ADT			MD	123	0	2		MD			ADT	1,527	2,130
9.8%	7.9%	43,500											39,800	8.1%	9.8%
PM	MD	PM	MD		PM	MD	123	0	2	MD	PM	MD	PM	MD	PM
					PM	MD	70	75	↑	SB			31	40	
							70	75	↔				31	40	
							1,540	1,254	↔	EB	9	WB	↔	1,496	2,090
							0	0	↓	NB			0	0	
									↔	↑					
									↔	↔					
PM	MD	PM	MD		PM	MD	470	38	435	MD	PM	MD	PM	MD	PM
9.8%	7.9%	43,500											39,800	8.1%	9.8%
1,610	1,329	ADT			MD	470	38	435		MD			ADT	1,691	1,765
⇒	⇒	Origin	ADT	7,100	PM	440	30	220		PM	7,100	ADT	Origin	⇒	⇒
	Flow	↓	0	13.3%	MD					MD	13.3%	943	↑	Flow	
Adj.	↓	0	9.7%	PM						PM	9.7%	690	↑		Adj.

Carroll Wy - Yorba St / 17th St															
Adj.	↓	290	9.7%	PM						PM	9.7%	265	↑	DATE	
	Flow	↓	286	9.4%	MD					MD	9.4%	252	↑	Flow	
↔	↔	Origin	ADT	5,700	PM	150	30	110		PM	5,700	ADT	Origin	↔	↔
2,140	1,520	ADT			MD	182	38	66		MD			ADT	1,193	1,715
9.8%	8.0%	40,000											37,795	6.9%	8.9%
PM	MD	PM	MD		PM	MD	182	38	66	MD	PM	MD	PM	MD	PM
					PM	MD	140	159	↑	SB			40	35	
							140	159	↔				40	35	
							1,420	1,290	↔	EB	10	WB	↔	1,105	1,630
							210	245	↓	NB			48	50	
									↔	↑					
									↔	↔					
PM	MD	PM	MD		PM	MD	233	53	41	MD	PM	MD	PM	MD	PM
9.8%	8.0%	40,000											37,795	6.9%	8.9%
1,770	1,694	ADT			MD	233	53	41		MD			ADT	1,397	1,630
⇒	⇒	Origin	ADT	8,600	PM	360	90	100		PM	8,600	ADT	Origin	⇒	⇒
	Flow	↓	331	7.7%	MD					MD	7.7%	327	↑	Flow	
Adj.	↓	290	9.8%	PM						PM	9.8%	550	↑		Adj.

Forecasted Intersection Traffic Volumes 2035nP_MD

Yorba St - Enderle Center Dr / 17th St															
Adj.	↓	440	9.8%	PM						PM	9.8%	620	↑	DATE	
	Flow	↓	305	5.9%	MD					MD	5.9%	332	↑	Flow	
↔	↔	Origin	ADT	10,800	PM	210	90	140		PM	10,800	ADT	Origin	↔	↔
1,740	1,177	ADT			MD	178	54	73		MD			ADT	1,060	1,730
8.8%	6.9%	37,795			PM	210	90	140		PM			33,100	7.1%	9.8%
PM	MD	PM	MD		PM	MD	178	54	73	MD	PM	MD	PM	MD	PM
							↔	↓	↔						
		210	203			210	203	↑		90	230	90	230		
		1,330	1,177			1,330	1,177	↔	EB	11	WB	↔	922	1,440	
		50	54			50	54	↓		NB		↓	48	60	
								↔		↑		↔			
PM	MD	PM	MD			PM	MD	77	39	25	MD	PM	MD	PM	MD
8.8%	6.9%	37,795											33,100	7.1%	9.8%
1,590	1,434	ADT											ADT	1,275	1,510
⇒	⇒	Origin	ADT	5,200	PM	90	180	40		PM	5,200	ADT	Origin	⇒	⇒
	Flow	↓	156	5.7%	MD					MD	5.7%	141	↑	Flow	
Adj.	↓	200	9.8%	PM						PM	9.8%	310	↑	Adj.	

Yorba St / Vandenberg Ln															
Adj.	↓	225	9.7%	PM						PM	9.7%	505	↑	DATE	
	Flow	↓	288	7.2%	MD					MD	7.2%	252	↑	Flow	
↔	↔	Origin	ADT	7,500	PM	5	190	30		PM	7,500	ADT	Origin	↔	↔
10	7	ADT			MD	5	264	19		MD			ADT	129	200
10.0%	5.0%	200			PM	5	190	30		PM			3,700	4.8%	9.9%
PM	MD	PM	MD		PM	MD	5	264	19	MD	PM	MD	PM	MD	PM
							↔	↓	↔						
		5	3			5	3	↑		SB		↑	80	130	
		5	0			5	0	↔	EB	12	WB	↔	2	0	
		0	0			0	0	↓		NB		↓	47	70	
								↔		↑		↔			
PM	MD	PM	MD			PM	MD	0	169	29	MD	PM	MD	PM	MD
10.0%	5.0%	200											3,700	4.8%	9.9%
10	3	ADT											ADT	48	165
⇒	⇒	Origin	ADT	7,800	PM	5	370	130		PM	7,800	ADT	Origin	⇒	⇒
	Flow	↓	311	6.5%	MD					MD	6.5%	198	↑	Flow	
Adj.	↓	260	9.8%	PM						PM	9.8%	505	↑	Adj.	

Forecasted Intersection Traffic Volumes 2035nP_MD

Tustin Ave / North Proj Dwy - Annie's Salon															
Adj.	↓	1,005	10.6%	PM						PM	10.6%	2,145	↑	DATE	
	Flow	↓	878	6.5%	MD					MD	6.5%	1,064	↑	Flow	
↔	↔	Origin	ADT	29,856	PM	5	1,000	0		PM	29,856	ADT	Origin	↔	↔
15	16	ADT			MD	6	872	0		MD			ADT	0	0
10.0%	10.0%	300												#DIV/0!	#DIV/0!
PM	MD	PM	MD		PM	MD	6	872	0	MD	PM	MD	PM	MD	PM
		5	3		5	3	↑		SB		↑	0	0		
		0	0		0	0	⇒	EB	13	WB	⇐	0	0		
		10	11		10	11	↓		NB		↓	0	0		
PM	MD	PM	MD		PM	MD		10	1,061	0	MD	PM	MD	PM	MD
10.0%	10.0%	300						10	2,140	0	PM		0	#DIV/0!	#DIV/0!
15	14	ADT			MD			10	1,061	0	MD		ADT	0	0
⇒	⇒	Origin	ADT	29,856	PM	10	2,140	0		PM	29,856	ADT	Origin	⇒	⇒
Adj.	↓	1,010	10.6%	PM						PM	10.6%	2,150	↑	Flow	Adj.

Tustin Ave / South Proj Dwy - 7-Eleven															
Adj.	↓	1,010	10.6%	PM						PM	10.6%	2,150	↑	DATE	
	Flow	↓	904	6.6%	MD					MD	6.6%	1,074	↑	Flow	
↔	↔	Origin	ADT	29,856	PM	40	970	0		PM	29,856	ADT	Origin	↔	↔
50	36	ADT			MD	28	876	0		MD			ADT	0	0
10.0%	9.8%	1,200												#DIV/0!	#DIV/0!
PM	MD	PM	MD		PM	MD	28	876	0	MD	PM	MD	PM	MD	PM
		20	15		20	15	↑		SB		↑	0	0		
		0	0		0	0	⇒	EB	14	WB	⇐	0	0		
		50	66		50	66	↓		NB		↓	0	0		
PM	MD	PM	MD		PM	MD		8	1,059	0	MD	PM	MD	PM	MD
10.0%	9.8%	1,200						10	2,130	0	PM		0	#DIV/0!	#DIV/0!
70	81	ADT			MD			8	1,059	0	MD		ADT	0	0
⇒	⇒	Origin	ADT	29,856	PM	10	2,130	0		PM	29,856	ADT	Origin	⇒	⇒
Adj.	↓	1,020	10.6%	PM						PM	10.6%	2,140	↑	Flow	Adj.

Forecasted Intersection Traffic Volumes 2035nP_MD

Ponderosa St / Proj Dwy														
Adj.	⇩	40	10.0%	PM						PM	10.0%	80	⇧	DATE
	Flow	⇩	49	9.1%	MD					MD	9.1%	60	⇧	Flow
⇐	⇐	Origin	ADT	1,200	PM	0	40	0		PM	1,200	ADT	Origin	⇐
0	0	ADT			MD	0	49	0		MD			ADT	0
#DIV/0!	#DIV/0!	0			PM	0	40	0		PM			0	#DIV/0!
PM	MD	PM	MD	PM	MD	0	49	0		MD	PM	MD	PM	MD
		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	0		0	0	0	0	0
PM	MD	PM	MD	PM	MD	0	60	0		MD	PM	MD	PM	MD
#DIV/0!	#DIV/0!	0		0		0	80	0		0		0	#DIV/0!	#DIV/0!
0	0	ADT			MD	0	60	0		MD			ADT	0
⇒	⇒	Origin	ADT	1,200	PM	0	80	0		PM	1,200	ADT	Origin	⇒
Adj.	⇩	40	10.0%	PM						PM	10.0%	80	⇧	Adj.

Forecasted Intersection Traffic Volumes 2035nP_MD

Tustin Ave / Catalina Ave															
Adj.	↓	2,905	15.6%	PM						PM	15.6%	1,760	↑	DATE	
Flow	↓	1,075	7.2%	MD						MD	7.2%	1,080	↑	Flow	
←	←	Origin	ADT	29,856	PM	1,530	1,350	25	PM	29,856	ADT	Origin	←	←	
1,555	90	ADT			MD	32	1,150	43	MD			ADT	86	65	
9.8%	1.0%	16,700										23,000	0.7%	9.8%	
PM	MD	PM	MD	PM	MD	32	1,000	43	MD	PM	MD	PM	MD	PM	
						←	↓	⇒							
		50	30	50	30	↑	SB		↑	61	10	61	10		
		25	3	25	3	⇒	EB	16	WB	←	3	5	3	5	
		0	49	0	49	↓	NB		↓	22	50	22	50		
						←	↑	⇒							
PM	MD	PM	MD	PM	MD	55	989	19	MD	PM	MD	PM	MD	PM	
9.8%	1.0%	16,700										23,000	0.7%	9.8%	
75	82	ADT										ADT	65	2,180	
⇒	⇒	Origin	ADT	29,856	PM	20	1,700	2,130	PM	29,856	ADT	Origin	⇒	⇒	
Flow	↓	1,071	7.1%	MD						MD	7.1%	1,063	↑	Flow	
Adj.	↓	1,400	17.6%	PM						PM	17.6%	3,850	↑	Adj.	

Appendix F – Existing Plus Project Conditions Intersection Analysis Worksheets

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.876
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	62	405	105	112	2600	93	100	288	187	112	202	109
Growth 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
Initial Bse:	62	405	105	112	2600	93	100	288	187	112	202	109
Added Vol:	22	9	9	0	9	0	0	0	9	9	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	414	114	112	2609	93	100	288	196	121	202	109
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	87	427	118	116	2692	96	103	297	202	125	208	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	427	118	116	2692	96	103	297	202	125	208	112
PCE 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
MLF 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
FinalVolume:	87	427	118	116	2692	96	103	297	202	125	208	112

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.35	0.65	2.00	2.90	0.10	1.00	1.19	0.81	1.00	1.30	0.70
Final Sat.:	1600	3999	1101	3200	4924	176	1600	2023	1377	1600	2208	1192

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.05	0.11	0.11	0.04	0.55	0.55	0.06	0.15	0.15	0.08	0.09	0.09
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.759
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	105	189	209	549	1769	20	180	673	132	541	760	206
Growth 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
Initial Bse:	105	189	209	549	1769	20	180	673	132	541	760	206
Added Vol:	0	9	0	39	9	0	14	0	0	0	13	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	105	198	209	588	1778	20	194	673	132	541	773	224
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	108	205	216	607	1837	21	200	695	136	559	799	231
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	205	216	607	1837	21	200	695	136	559	799	231
PCE 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
MLF 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
FinalVolume:	108	205	216	607	1837	21	200	695	136	559	799	231
OvlAdjVol:	0			0			0			0		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.97	0.03	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	5043	57	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.03	0.06	0.11	0.19	0.36	0.36	0.06	0.14	0.08	0.17	0.16	0.12
OvlAdjV/S:	0.00			0.00			0.00			0.00		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing Plus Project Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.759
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	0	2	0	3	0	1	0

Volume Module:

Base Vol:	105	189	209	549	1769	20	180	673	132	541	760	206
Growth 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
Initial Bse:	105	189	209	549	1769	20	180	673	132	541	760	206
Added Vol:	0	9	0	39	9	0	14	0	0	0	13	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	105	198	209	588	1778	20	194	673	132	541	773	224
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	108	205	216	607	1837	21	200	695	136	559	799	231
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	108	205	216	607	1837	21	200	695	136	559	799	231
PCE 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
MLF 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
FinalVolume:	108	205	216	607	1837	21	200	695	136	559	799	231
OvlAdjVol:	0									0		

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	3.00	1.00	2.00	2.97	0.03	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1955	3200	5043	57	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.03	0.04	0.11	0.19	0.36	0.36	0.06	0.14	0.08	0.17	0.16	0.12
OvlAdjV/S:	0.00								0.00			
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.595
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	32	405	131	210	2151	75	25	16	79	26	6	39
Growth 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
Initial Bse:	32	405	131	210	2151	75	25	16	79	26	6	39
Added Vol:	0	9	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	414	131	210	2160	75	25	16	79	26	6	39
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	34	434	137	220	2264	79	26	17	83	27	6	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	434	137	220	2264	79	26	17	83	27	6	41
PCE 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
MLF 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
FinalVolume:	34	434	137	220	2264	79	26	17	83	27	6	41

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.90	0.10	0.61	0.39	1.00	0.81	0.19	1.00
Final Sat.:	1600	5100	1700	3200	4929	171	1037	663	1700	1381	319	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.02	0.09	0.08	0.07	0.46	0.46	0.02	0.03	0.05	0.02	0.02	0.02
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.522
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name: Sherry Ln - Cabrillo Park Ave						17th St							
Approach: North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	119	39	85	78	94	29	11	769	221	165	838	30
Growth 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
Initial Bse:	119	39	85	78	94	29	11	769	221	165	838	30
Added Vol:	0	0	5	0	0	0	0	9	0	4	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	39	90	78	94	29	11	778	221	169	847	30
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	125	41	95	82	99	31	12	819	233	178	892	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	125	41	95	82	99	31	12	819	233	178	892	32
PCE 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
MLF 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
FinalVolume:	125	41	95	82	99	31	12	819	233	178	892	32

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.76	0.24	1.00	2.34	0.66	1.00	2.90	0.10
Final Sat.:	1600	1700	1700	1600	1299	401	1600	3972	1128	1600	4926	174

Capacity Analysis Module:

Vol/Sat:	0.08	0.02	0.06	0.05	0.08	0.08	0.01	0.21	0.21	0.11	0.18	0.18
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[13.3]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	107	0	0	22	0	1414	22	0	1495	33
Growth 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
Initial Bse:	0	0	107	0	0	22	0	1414	22	0	1495	33
Added Vol:	0	0	0	0	0	13	0	39	0	0	18	23
PasserByVol:	0	0	0	0	0	6	0	0	0	0	0	10
Initial Fut:	0	0	107	0	0	41	0	1453	22	0	1513	66
User 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
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	112	0	0	43	0	1518	23	0	1581	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	112	0	0	43	0	1518	23	0	1581	69

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	391	xxxx	xxxx	561	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	613	xxxx	xxxx	476	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	613	xxxx	xxxx	476	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.18	xxxx	xxxx	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.7	xxxx	xxxx	0.3	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.2	xxxxx	xxxx	13.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.2			13.3			xxxxxxx			xxxxxxx		
ApproachLOS:	B			B			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.619
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	42	224	22	18	932	582	322	1498	43
Growth 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
Initial Bse:	0	0	0	42	224	22	18	932	582	322	1498	43
Added Vol:	0	0	0	0	0	0	0	26	13	0	41	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	42	224	22	18	958	595	322	1539	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.94
PHF Volume:	0	0	0	45	239	23	19	1021	0	343	1641	46
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	45	239	23	19	1021	0	343	1641	46
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	45	239	23	19	1021	0	343	1641	46

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.91	0.09	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	0	0	0	1600	1548	152	1600	5100	1955	1600	4961	139

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.03	0.15	0.15	0.01	0.20	0.00	0.21	0.33	0.33
Crit Moves:				****			****			****		

Existing + Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

AM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	958	595	322	1539	43	0	0	0	42	224	22
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	19	1019	0	343	1637	46				45	238	23
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	28	1711	613	391	2752	77				312	294	28
Arrive On Green	0.02	0.38	0.00	0.25	0.60	0.60				0.20	0.20	0.20
Sat Flow, veh/h	1587	4550	1629	1587	4550	128				1587	1497	145
Grp Volume(v), veh/h	19	1019	0	343	1091	592				45	0	261
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1644				1587	0	1641
Q Serve(g_s), s	0.9	13.4	0.0	15.5	16.5	16.5				1.7	0.0	11.3
Cycle Q Clear(g_c), s	0.9	13.4	0.0	15.5	16.5	16.5				1.7	0.0	11.3
Prop In Lane	1.00		1.00	1.00		0.08				1.00		0.09
Lane Grp Cap(c), veh/h	28	1711	613	391	1835	994				312	0	322
V/C Ratio(X)	0.69	0.60	0.00	0.88	0.59	0.60				0.14	0.00	0.81
Avail Cap(c_a), veh/h	126	1742	624	693	2245	1217				544	0	562
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	36.4	18.7	0.0	27.0	9.1	9.1				24.7	0.0	28.6
Incr Delay (d2), s/veh	25.9	0.5	0.0	6.4	0.3	0.6				0.2	0.0	4.9
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	0.6	5.7	0.0	7.5	6.9	7.6				0.8	0.0	5.6
LnGrp Delay(d),s/veh	62.2	19.2	0.0	33.3	9.4	9.7				24.9	0.0	33.5
LnGrp LOS	E	B		C	A	A				C		C
Approach Vol, veh/h		1038			2026						306	
Approach Delay, s/veh		20.0			13.5						32.2	
Approach LOS		C			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			22.8	32.5		19.1	5.8	49.5				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			32.5	28.5		25.5	5.9	55.1				
Max Q Clear Time (g_c+I1), s			17.5	15.4		13.3	2.9	18.5				
Green Ext Time (p_c), s			0.9	11.4		1.3	0.0	26.5				
Intersection Summary												
HCM 2010 Ctrl Delay			17.2									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:

Base Vol:	0	0	666	0	0	395	0	974	0	0	1468	0
Growth 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
Initial Bse:	0	0	666	0	0	395	0	974	0	0	1468	0
Added Vol:	0	0	0	0	0	14	0	26	0	0	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	666	0	0	409	0	1000	0	0	1495	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.00	0.85	0.85	0.00	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	0	0	0	0	1175	0	0	1757	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1175	0	0	1757	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	392	xxxx	xxxx	878	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	613	xxxx	xxxx	295	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	613	xxxx	xxxx	295	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1331	309	0	1468	727
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1331	309	0	1468	727
Added Vol:	0	0	0	0	0	0	0	13	13	0	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1344	322	0	1495	727
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.00
PHF Volume:	0	0	0	0	0	0	0	1434	0	0	1596	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1434	0	0	1596	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.516
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	328	27	356	1	0	99	28	1299	0	0	1759	36
Growth 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
Initial Bse:	328	27	356	1	0	99	28	1299	0	0	1759	36
Added Vol:	14	0	0	0	0	0	0	13	0	0	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	342	27	356	1	0	99	28	1312	0	0	1773	36
User Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF 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
PHF Volume:	330	26	343	1	0	95	27	1265	0	0	1709	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	330	26	343	1	0	95	27	1265	0	0	1709	35
PCE 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
MLF 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
FinalVolume:	330	26	343	1	0	95	27	1265	0	0	1709	35

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.42	0.11	1.47	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2406	190	2504	17	0	1683	1700	5100	0	0	6665	135

Capacity Analysis Module:

Vol/Sat:	0.14	0.14	0.14	0.06	0.00	0.06	0.02	0.25	0.00	0.00	0.26	0.26
Crit Moves:	****			****			****			****		

Existing + Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

AM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	1312	0	0	1773	36	342	27	356	1	0	99
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.92	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1372	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1372	1346		1443	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	29	1367	0	0	1847	38	356	28	371	1	0	103
RTOR Reduction (vph)	0	0	0	0	2	0	0	39	179	0	98	0
Lane Group Flow (vph)	29	1367	0	0	1883	0	263	216	58	0	6	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	1.5	42.4			36.4		19.6	19.6	19.6		5.0	
Effective Green, g (s)	1.5	42.4			36.4		19.6	19.6	19.6		5.0	
Actuated g/C Ratio	0.02	0.53			0.45		0.24	0.24	0.24		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	29	2396			2584		366	334	327		89	
v/s Ratio Prot	0.02	c0.30			c0.33		c0.17	0.16			c0.00	
v/s Ratio Perm									0.04			
v/c Ratio	1.00	0.57			0.73		0.72	0.65	0.18		0.07	
Uniform Delay, d1	39.5	12.9			18.0		27.9	27.3	24.1		35.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	167.1	0.3			1.1		6.6	4.2	0.3		0.3	
Delay (s)	206.6	13.2			19.1		34.5	31.6	24.3		35.9	
Level of Service	F	B			B		C	C	C		D	
Approach Delay (s)		17.2			19.1			30.3			35.9	
Approach LOS		B			B			C			D	

Intersection Summary

HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.538
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	130	22	21	48	47	98	58	1328	270	93	1557	42
Growth 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
Initial Bse:	130	22	21	48	47	98	58	1328	270	93	1557	42
Added Vol:	5	0	0	0	0	0	0	9	4	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	22	21	48	47	98	58	1337	274	93	1566	42
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	139	23	22	49	48	101	60	1376	282	96	1611	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	23	22	49	48	101	60	1376	282	96	1611	43
PCE 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
MLF 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
FinalVolume:	139	23	22	49	48	101	60	1376	282	96	1611	43

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.32	0.68	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	3400	1700	1700	1700	551	1149	1700	5100	1700	1700	4967	133

Capacity Analysis Module:

Vol/Sat:	0.04	0.01	0.01	0.03	0.09	0.09	0.04	0.27	0.17	0.06	0.32	0.32
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.586
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	20	31	21	228	262	280	106	1300	35	46	1389	57
Growth 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
Initial Bse:	20	31	21	228	262	280	106	1300	35	46	1389	57
Added Vol:	0	0	0	0	0	0	0	9	0	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	31	21	228	262	280	106	1309	35	46	1398	57
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	20	32	21	233	268	287	108	1340	36	47	1431	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	20	32	21	233	268	287	108	1340	36	47	1431	58
PCE 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
MLF 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
FinalVolume:	20	32	21	233	268	287	108	1340	36	47	1431	58

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.88	0.12
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4967	133	1700	4900	200

Capacity Analysis Module:

Vol/Sat:	0.01	0.02	0.01	0.14	0.16	0.17	0.06	0.27	0.27	0.03	0.29	0.29
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.356
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	0	1	0	1	0

Volume Module:	Yorba St NB			Yorba St SB			Vandenberg Ln EB			Vandenberg Ln WB		
Base Vol:	0	101	44	14	357	2	0	1	0	255	0	50
Growth 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
Initial Bse:	0	101	44	14	357	2	0	1	0	255	0	50
Added Vol:	0	5	0	0	4	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	106	44	14	361	2	0	1	0	255	0	50
User 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
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	0	126	52	17	429	2	0	1	0	303	0	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	126	52	17	429	2	0	1	0	303	0	59
PCE 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
MLF 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
FinalVolume:	0	126	52	17	429	2	0	1	0	303	0	59

Saturation Flow Module:	Yorba St NB			Yorba St SB			Vandenberg Ln EB			Vandenberg Ln WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.41	0.59	1.00	1.99	0.01	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1700	2403	997	1700	3381	19	0	1700	0	1700	0	1700

Capacity Analysis Module:	Yorba St NB			Yorba St SB			Vandenberg Ln EB			Vandenberg Ln WB		
Vol/Sat:	0.00	0.05	0.05	0.01	0.13	0.13	0.00	0.00	0.00	0.18	0.00	0.03
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	3.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	24	0	31	1	562	20	39	2357	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	26	0	33	1	598	21	41	2507	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2896	3216	1259	1948	3211	310	2517	0	0	619	0	0
Stage 1	2595	2595	-	611	611	-	-	-	-	-	-	-
Stage 2	301	621	-	1337	2600	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	10	162	39	10	686	177	-	-	957	-	-
Stage 1	25	51	-	448	482	-	-	-	-	-	-	-
Stage 2	683	477	-	162	50	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	6	10	162	33	10	686	177	-	-	957	-	-
Mov Cap-2 Maneuver	6	10	-	33	10	-	-	-	-	-	-	-
Stage 1	25	49	-	445	479	-	-	-	-	-	-	-
Stage 2	646	474	-	137	48	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.2	158.8	0	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	177	-	-	162	71	957	-
HCM Lane V/C Ratio	0.006	-	-	0.118	0.824	0.043	-
HCM Control Delay (s)	25.5	-	-	30.2	158.8	8.9	-
HCM Lane LOS	D	-	-	D	F	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	4	0.1	-

Existing + Project (with Mitigation)
13: Tustin Ave & Annie's Salon/North Dwy

AM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	0.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	55	1	562	20	39	2375	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	59	1	598	21	41	2527	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2855	3235	1268	1957	3230	310	2536	0	0	619	0	0
Stage 1	2614	2614	-	611	611	-	-	-	-	-	-	-
Stage 2	241	621	-	1346	2619	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	12	9	160	51	9	585	174	-	-	595	-	-
Stage 1	24	49	-	379	482	-	-	-	-	-	-	-
Stage 2	705	477	-	156	49	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	10	8	160	42	8	585	174	-	-	595	-	-
Mov Cap-2 Maneuver	10	8	-	42	8	-	-	-	-	-	-	-
Stage 1	24	46	-	377	479	-	-	-	-	-	-	-
Stage 2	631	474	-	128	46	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.5	11.8	0	0.2
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	174	-	-	160	585	595	-	-
HCM Lane V/C Ratio	0.006	-	-	0.12	0.1	0.07	-	-
HCM Control Delay (s)	25.8	-	-	30.5	11.8	11.5	-	-
HCM Lane LOS	D	-	-	D	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.2	-	-

Existing + Project
14: Tustin Ave & 7-Eleven/South Dwy

AM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	0.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	33	0	0	50	1	540	39	0	2355	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	53	1	574	41	0	2505	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2811	3140	1269	1599	3135	308	2538	0	0	616	0	0
Stage 1	2522	2522	-	597	597	-	-	-	-	-	-	-
Stage 2	289	618	-	1002	2538	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	13	11	137	89	11	688	66	-	-	960	-	-
Stage 1	16	55	-	443	490	-	-	-	-	-	-	-
Stage 2	670	479	-	240	54	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	12	11	137	65	11	688	66	-	-	960	-	-
Mov Cap-2 Maneuver	15	47	-	138	45	-	-	-	-	-	-	-
Stage 1	16	55	-	433	479	-	-	-	-	-	-	-
Stage 2	604	468	-	178	54	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.1	10.7	0.8	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	66	-	-	137	688	960	-	-
HCM Lane V/C Ratio	0.016	-	-	0.256	0.077	-	-	-
HCM Control Delay (s)	60.4	0.7	-	40.1	10.7	0	-	-
HCM Lane LOS	F	A	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1	0.3	0	-	-

Existing + Project (with Mitigation)
14: Tustin Ave & 7-Eleven/South Dwy

AM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	33	0	0	50	0	540	39	0	2355	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	53	0	574	41	0	2505	33
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2752	3138	1269	1597	3133	308	2538	0	0	616	0	0
Stage 1	2522	2522	-	595	595	-	-	-	-	-	-	-
Stage 2	230	616	-	1002	2538	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	21	11	137	112	11	587	66	-	-	597	-	-
Stage 1	16	55	-	378	491	-	-	-	-	-	-	-
Stage 2	690	480	-	234	54	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	19	11	137	83	11	587	66	-	-	597	-	-
Mov Cap-2 Maneuver	15	47	-	139	46	-	-	-	-	-	-	-
Stage 1	16	55	-	378	491	-	-	-	-	-	-	-
Stage 2	627	480	-	174	54	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	40.1			11.7			0			0		
HCM LOS	E			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	66	-	-	137	587	597	-	-				
HCM Lane V/C Ratio	-	-	-	0.256	0.091	-	-	-				
HCM Control Delay (s)	0	-	-	40.1	11.7	0	-	-				
HCM Lane LOS	A	-	-	E	B	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	1	0.3	0	-	-				

Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	19	33	33	22	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	36	36	24	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	132	24	24
Stage 1	24	-	-
Stage 2	108	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	862	1052	1591
Stage 1	999	-	-
Stage 2	916	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	842	1052	1591
Mov Cap-2 Maneuver	842	-	-
Stage 1	999	-	-
Stage 2	895	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1591	-	1052	-	-
HCM Lane V/C Ratio	0.023	-	0.02	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	53.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	28	4	0	58	35	511	11	37	2655	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	29	4	0	59	36	521	11	38	2709	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3128	3400	1366	1757	3406	266	2733	0	0	533	0	0
Stage 1	2796	2796	-	598	598	-	-	-	-	-	-	-
Stage 2	332	604	-	1159	2808	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 8	7	118	70	7	732	52	-	-	1031	-	-
Stage 1	~ 10	40	-	442	489	-	-	-	-	-	-	-
Stage 2	633	486	-	191	39	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 3	2	118	23	2	732	52	-	-	1031	-	-
Mov Cap-2 Maneuver	~ 3	2	-	23	2	-	-	-	-	-	-	-
Stage 1	~ 3	39	-	136	150	-	-	-	-	-	-	-
Stage 2	179	150	-	139	38	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 3657.6	24.7	10.4	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	52	-	-	7	245	1031	-
HCM Lane V/C Ratio	0.687	-	-	6.851	0.258	0.037	-
HCM Control Delay (s)	166.1	-	-	\$ 3657.6	24.7	8.6	-
HCM Lane LOS	F	-	-	F	C	A	-
HCM 95th %tile Q(veh)	2.8	-	-	7.5	1	0.1	-

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

Intersection												
Int Delay, s/veh	3.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	47	0	0	62	44	520	11	37	2664	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	48	0	0	63	45	531	11	38	2718	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3161	3438	1371	1789	3443	271	2742	0	0	542	0	0
Stage 1	2806	2806	-	626	626	-	-	-	-	-	-	-
Stage 2	355	632	-	1163	2817	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.2	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.6	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	7	173	66	7	727	52	-	-	1023	-	-
Stage 1	10	39	-	426	475	-	-	-	-	-	-	-
Stage 2	613	472	-	190	39	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	2	1	173	12	1	727	52	-	-	1023	-	-
Mov Cap-2 Maneuver	2	1	-	12	1	-	-	-	-	-	-	-
Stage 1	1	38	-	57	64	-	-	-	-	-	-	-
Stage 2	75	64	-	132	38	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	33.6	10.4	16.1	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	52	-	-	173	727	1023	-	-
HCM Lane V/C Ratio	0.863	-	-	0.277	0.087	0.037	-	-
HCM Control Delay (s)	210.4	-	-	33.6	10.4	8.7	-	-
HCM Lane LOS	F	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	3.7	-	-	1.1	0.3	0.1	-	-

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.656
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:

Base Vol:	189	1571	129	175	898	94	142	175	128	74	222	141
Growth 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
Initial Bse:	189	1571	129	175	898	94	142	175	128	74	222	141
Added Vol:	27	11	11	0	12	0	0	0	12	12	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	216	1582	140	175	910	94	142	175	140	86	222	141
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	223	1631	144	180	938	97	146	180	144	89	229	145
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	1631	144	180	938	97	146	180	144	89	229	145
PCE 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
MLF 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
FinalVolume:	223	1631	144	180	938	97	146	180	144	89	229	145

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.76	0.24	2.00	2.72	0.28	1.00	1.11	0.89	1.00	1.22	0.78
Final Sat.:	1600	4685	415	3200	4623	477	1600	1889	1511	1600	2079	1321

Capacity Analysis Module:

Vol/Sat:	0.14	0.35	0.35	0.06	0.20	0.20	0.09	0.10	0.10	0.06	0.11	0.11
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.951
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	315	1188	564	451	444	41	419	917	126	231	973	375
Growth 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
Initial Bse:	315	1188	564	451	444	41	419	917	126	231	973	375
Added Vol:	0	12	0	49	11	0	18	0	0	0	16	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	315	1200	564	500	455	41	437	917	126	231	989	398
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	338	1288	605	536	488	44	469	984	135	248	1061	427
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	338	1288	605	536	488	44	469	984	135	248	1061	427
PCE 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
MLF 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
FinalVolume:	338	1288	605	536	488	44	469	984	135	248	1061	427
OvlAdjVol:	454									99		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.75	0.25	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4678	422	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.11	0.38	0.31	0.17	0.10	0.10	0.15	0.19	0.08	0.08	0.21	0.22
OvlAdjV/S:	0.23									0.05		
Crit Moves:	****			****			****			****		

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Existing Plus Project Traffic Conditions
With Existing Plus Project Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: D

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for Tustin Ave and 17th St.

Volume Module: Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, OvlAdjVol.

Saturation Flow Module: Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns: Vol/Sat, OvlAdjV/S, Crit Moves.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.580
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:

Base Vol:	93	1509	73	98	531	105	64	3	65	51	14	217
Growth 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
Initial Bse:	93	1509	73	98	531	105	64	3	65	51	14	217
Added Vol:	0	12	0	0	11	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	93	1521	73	98	542	105	64	3	65	51	14	217
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	100	1632	78	105	582	113	69	3	70	55	15	233
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	100	1632	78	105	582	113	69	3	70	55	15	233
PCE 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
MLF 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
FinalVolume:	100	1632	78	105	582	113	69	3	70	55	15	233

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.51	0.49	0.96	0.04	1.00	0.78	0.22	1.00
Final Sat.:	1600	5100	1700	3200	4272	828	1624	76	1700	1334	366	1700

Capacity Analysis Module:

Vol/Sat:	0.06	0.32	0.05	0.03	0.14	0.14	0.04	0.04	0.04	0.03	0.04	0.14
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.613
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:		17th St														
Approach:		North Bound			South Bound			East Bound			West Bound					
Movement:		L	T	R	L	T	R	L	T	R	L	T	R			
Control:		Permitted			Permitted			Protected			Protected					
Rights:		Include			Include			Include			Include					
Min. Green:		0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:		1	0	1	0	1	1	0	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	285	125	147	126	60	48	42	960	97	127	1195	63
Growth 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
Initial Bse:	285	125	147	126	60	48	42	960	97	127	1195	63
Added Vol:	0	0	6	0	0	0	0	12	0	5	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	285	125	153	126	60	48	42	972	97	132	1206	63
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	301	132	161	133	63	51	44	1025	102	139	1272	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	301	132	161	133	63	51	44	1025	102	139	1272	66
PCE 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
MLF 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
FinalVolume:	301	132	161	133	63	51	44	1025	102	139	1272	66

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.56	0.44	1.00	2.73	0.27	1.00	2.85	0.15
Final Sat.:	1600	1700	1700	1600	944	756	1600	4637	463	1600	4847	253

Capacity Analysis Module:

Vol/Sat:	0.19	0.08	0.09	0.08	0.07	0.07	0.03	0.22	0.22	0.09	0.26	0.26
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[14.8]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	11	0	0	36	0	1747	213	0	1557	76
Growth 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
Initial Bse:	0	0	11	0	0	36	0	1747	213	0	1557	76
Added Vol:	0	0	0	0	0	16	0	49	0	0	23	29
PasserByVol:	0	0	0	0	0	7	0	0	0	0	0	13
Initial Fut:	0	0	11	0	0	59	0	1796	213	0	1580	118
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	12	0	0	63	0	1927	229	0	1695	127
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	12	0	0	63	0	1927	229	0	1695	127

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	596	xxxx	xxxx	628	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	452	xxxx	xxxx	430	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	452	xxxx	xxxx	430	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.03	xxxx	xxxx	0.15	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level of Service Module:

2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.2	xxxxx	xxxx	14.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.2			14.8			xxxxxxx			xxxxxxx		
ApproachLOS:	B			B			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.588
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	13	39	11	43	1164	514	400	1519	63
Growth 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
Initial Bse:	0	0	0	13	39	11	43	1164	514	400	1519	63
Added Vol:	0	0	0	0	0	0	0	32	16	0	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	13	39	11	43	1196	530	400	1572	63
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96
PHF Volume:	0	0	0	14	41	12	45	1251	0	418	1644	66
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	41	12	45	1251	0	418	1644	66
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	41	12	45	1251	0	418	1644	66

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.78	0.22	1.00	3.00	1.00	1.00	2.88	0.12
Final Sat.:	0	0	0	1600	1326	374	1600	5100	1955	1600	4903	197

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.03	0.03	0.03	0.25	0.00	0.26	0.34	0.34
Crit Moves:				****			****			****		

Existing + Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

PM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	1196	530	400	1572	63	0	0	0	13	39	11
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	45	1246	0	417	1638	66				14	41	11
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	54	2077	744	472	3232	130				72	58	15
Arrive On Green	0.03	0.46	0.00	0.30	0.72	0.72				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4487	181				1587	1267	340
Grp Volume(v), veh/h	45	1246	0	417	1107	597				14	0	52
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1635				1587	0	1607
Q Serve(g_s), s	1.9	13.8	0.0	16.9	10.8	10.8				0.6	0.0	2.2
Cycle Q Clear(g_c), s	1.9	13.8	0.0	16.9	10.8	10.8				0.6	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.11				1.00		0.21
Lane Grp Cap(c), veh/h	54	2077	744	472	2185	1177				72	0	73
V/C Ratio(X)	0.84	0.60	0.00	0.88	0.51	0.51				0.19	0.00	0.71
Avail Cap(c_a), veh/h	177	2195	786	860	2769	1493				412	0	417
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	32.4	13.7	0.0	22.5	4.2	4.2				31.0	0.0	31.7
Incr Delay (d2), s/veh	27.4	0.4	0.0	5.6	0.2	0.3				1.3	0.0	12.0
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	1.2	5.8	0.0	8.0	4.5	4.9				0.3	0.0	1.2
LnGrp Delay(d),s/veh	59.7	14.1	0.0	28.2	4.3	4.5				32.2	0.0	43.7
LnGrp LOS	E	B		C	A	A				C		D
Approach Vol, veh/h		1291			2121							66
Approach Delay, s/veh		15.7			9.1							41.2
Approach LOS		B			A							D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			24.5	35.3		7.6	6.8	53.0				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			36.5	32.5		17.5	7.5	61.5				
Max Q Clear Time (g_c+I1), s			18.9	15.8		4.2	3.9	12.8				
Green Ext Time (p_c), s			1.2	14.7		0.2	0.0	35.7				
Intersection Summary												
HCM 2010 Ctrl Delay			12.1									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:

Base Vol:	0	0	767	0	0	435	0	1177	0	0	1547	0
Growth 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
Initial Bse:	0	0	767	0	0	435	0	1177	0	0	1547	0
Added Vol:	0	0	0	0	0	18	0	32	0	0	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	767	0	0	453	0	1209	0	0	1582	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.00	0.93	0.93	0.00	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	0	0	0	0	0	1301	0	0	1703	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1301	0	0	1703	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	434	xxxx	xxxx	851	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	576	xxxx	xxxx	307	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	576	xxxx	xxxx	307	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1458	486	0	1547	826
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1458	486	0	1547	826
Added Vol:	0	0	0	0	0	0	0	16	16	0	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1474	502	0	1582	826
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.00	0.95	0.95	0.00
PHF Volume:	0	0	0	0	0	0	0	1548	0	0	1662	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1548	0	0	1662	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx	
ApproachLOS:	*		*		*		*		*		*	

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.859
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	404	24	199	2	0	98	64	1387	0	0	1906	35
Growth 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
Initial Bse:	404	24	199	2	0	98	64	1387	0	0	1906	35
Added Vol:	18	0	0	0	0	0	0	16	0	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	422	24	199	2	0	98	64	1403	0	0	1924	35
User 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
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	447	25	211	2	0	104	68	1486	0	0	2038	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	447	25	211	2	0	104	68	1486	0	0	2038	37
PCE 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
MLF 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
FinalVolume:	447	25	211	2	0	104	68	1486	0	0	2038	37

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.96	0.04	1.00	0.02	0.00	0.98	1.00	3.00	0.00	0.00	3.93	0.07
Final Sat.:	3337	63	1700	34	0	1666	1700	5100	0	0	6679	121

Capacity Analysis Module:

Vol/Sat:	0.13	0.40	0.12	0.06	0.00	0.06	0.04	0.29	0.00	0.00	0.31	0.31
Crit Moves:	****			****			****			****		

Existing + Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

PM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	64	1403	0	0	1924	35	422	24	199	2	0	98
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.99	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (prot)	1583	4550			5718		1504	1439	1346		1445	
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (perm)	1583	4550			5718		1504	1439	1346		1445	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	68	1493	0	0	2047	37	449	26	212	2	0	104
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	147	0	100	0
Lane Group Flow (vph)	68	1493	0	0	2082	0	247	246	44	0	6	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	4.8	48.5			39.2		18.4	18.4	18.4		5.2	
Effective Green, g (s)	4.8	48.5			39.2		18.4	18.4	18.4		5.2	
Actuated g/C Ratio	0.06	0.57			0.46		0.21	0.21	0.21		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	88	2577			2618		323	309	289		87	
v/s Ratio Prot	0.04	c0.33			c0.36		0.16	c0.17			c0.00	
v/s Ratio Perm									0.03			
v/c Ratio	0.77	0.58			0.80		0.76	0.80	0.15		0.07	
Uniform Delay, d1	39.9	12.0			19.8		31.6	31.8	27.3		37.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	33.4	0.3			1.7		10.3	13.2	0.2		0.4	
Delay (s)	73.3	12.3			21.5		41.9	45.0	27.5		38.3	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		14.9			21.5			39.0			38.3	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			22.3				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			85.6			Sum of lost time (s)		18.0				
Intersection Capacity Utilization			69.7%			ICU Level of Service		C				
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.660
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	323	83	92	102	26	133	127	1276	182	44	1500	31
Growth 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
Initial Bse:	323	83	92	102	26	133	127	1276	182	44	1500	31
Added Vol:	6	0	0	0	0	0	0	11	5	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	329	83	92	102	26	133	127	1287	187	44	1512	31
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	353	89	99	110	28	143	136	1382	201	47	1624	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	353	89	99	110	28	143	136	1382	201	47	1624	33
PCE 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
MLF 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
FinalVolume:	353	89	99	110	28	143	136	1382	201	47	1624	33

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.16	0.84	1.00	3.00	1.00	1.00	2.94	0.06
Final Sat.:	3400	1700	1700	1700	278	1422	1700	5100	1700	1700	4998	102

Capacity Analysis Module:

Vol/Sat:	0.10	0.05	0.06	0.06	0.10	0.10	0.08	0.27	0.12	0.03	0.32	0.32
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.635
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	80	163	30	81	72	140	192	1190	46	56	1380	205
Growth 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
Initial Bse:	80	163	30	81	72	140	192	1190	46	56	1380	205
Added Vol:	0	0	0	0	0	0	0	11	0	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	80	163	30	81	72	140	192	1201	46	56	1392	205
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	82	167	31	83	74	144	197	1233	47	57	1429	210
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	82	167	31	83	74	144	197	1233	47	57	1429	210
PCE 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
MLF 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
FinalVolume:	82	167	31	83	74	144	197	1233	47	57	1429	210

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.89	0.11	1.00	2.61	0.39
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4912	188	1700	4445	655

Capacity Analysis Module:

Vol/Sat:	0.05	0.10	0.02	0.05	0.04	0.08	0.12	0.25	0.25	0.03	0.32	0.32
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.281
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	0	0	1	0

Volume Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Base Vol:	1	333	118	27	168	3	2	1	0	63	0	114
Growth 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
Initial Bse:	1	333	118	27	168	3	2	1	0	63	0	114
Added Vol:	0	6	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	339	118	27	173	3	2	1	0	63	0	114
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	358	125	29	183	3	2	1	0	67	0	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	358	125	29	183	3	2	1	0	67	0	120
PCE 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
MLF 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
FinalVolume:	1	358	125	29	183	3	2	1	0	67	0	120

Saturation Flow Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.48	0.52	1.00	1.97	0.03	0.67	0.33	0.00	1.00	0.00	1.00
Final Sat.:	1700	2522	878	1700	3342	58	1133	567	0	1700	0	1700

Capacity Analysis Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Vol/Sat:	0.00	0.14	0.14	0.02	0.05	0.05	0.00	0.00	0.00	0.04	0.00	0.07
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	53.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	0	5	31	0	39	5	1993	26	50	935	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	33	0	42	5	2143	28	54	1005	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2196	3296	504	2778	3283	1085	1008	0	0	2171	0	0
Stage 1	1114	1114	-	2168	2168	-	-	-	-	-	-	-
Stage 2	1082	2182	-	610	1115	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	25	8	513	~ 9	9	212	683	-	-	242	-	-
Stage 1	222	282	-	48	85	-	-	-	-	-	-	-
Stage 2	232	83	-	448	282	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	17	6	513	~ 7	7	212	683	-	-	242	-	-
Mov Cap-2 Maneuver	17	6	-	~ 7	7	-	-	-	-	-	-	-
Stage 1	220	219	-	48	84	-	-	-	-	-	-	-
Stage 2	185	82	-	344	219	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	133.8	\$ 2314.9	0	1.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	683	-	-	37	15	242	-	-
HCM Lane V/C Ratio	0.008	-	-	0.262	5.018	0.222	-	-
HCM Control Delay (s)	10.3	-	-	133.8	\$ 2314.9	24.1	-	-
HCM Lane LOS	B	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	10.3	0.8	-	-

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

Existing + Project (with Mitigation)
13: Tustin Ave & Annie's Salon/North Dwy

PM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	9	0	0	70	5	1993	26	50	956	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	10	0	0	75	5	2143	28	54	1028	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2005	3319	515	2790	3306	1085	1030	0	0	2171	0	0
Stage 1	1137	1137	-	2168	2168	-	-	-	-	-	-	-
Stage 2	868	2182	-	622	1138	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	6.5	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	47	8	505	13	8	221	670	-	-	102	-	-
Stage 1	210	275	-	29	85	-	-	-	-	-	-	-
Stage 2	291	83	-	428	275	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	18	4	505	7	4	221	670	-	-	102	-	-
Mov Cap-2 Maneuver	18	4	-	7	4	-	-	-	-	-	-	-
Stage 1	208	129	-	29	84	-	-	-	-	-	-	-
Stage 2	190	82	-	198	129	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	29.5	0	3.7
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	670	-	-	505	221	102	-	-
HCM Lane V/C Ratio	0.008	-	-	0.019	0.341	0.527	-	-
HCM Control Delay (s)	10.4	-	-	12.3	29.5	74.2	-	-
HCM Lane LOS	B	-	-	B	D	F	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.4	2.4	-	-

Intersection												
Int Delay, s/veh	0.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	0	48	0	0	61	8	1953	50	0	929	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	52	0	0	66	9	2100	54	0	999	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2085	3189	518	2544	3181	1077	1037	0	0	2154	0	0
Stage 1	1018	1018	-	2144	2144	-	-	-	-	-	-	-
Stage 2	1067	2171	-	400	1037	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	10	430	20	10	215	376	-	-	246	-	-
Stage 1	198	313	-	49	87	-	-	-	-	-	-	-
Stage 2	232	84	-	565	307	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	28	10	430	18	10	215	376	-	-	246	-	-
Mov Cap-2 Maneuver	94	63	-	43	65	-	-	-	-	-	-	-
Stage 1	198	313	-	49	87	-	-	-	-	-	-	-
Stage 2	161	84	-	497	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	28.9	0.1	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	376	-	-	430	215	246	-
HCM Lane V/C Ratio	0.023	-	-	0.12	0.305	-	-
HCM Control Delay (s)	14.8	0	-	14.5	28.9	0	-
HCM Lane LOS	B	A	-	B	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1.2	0	-

Existing + Project (with Mitigation)
14: Tustin Ave & 7-Eleven/South Dwy

PM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	0.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	66	0	0	61	0	1953	50	0	929	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	71	0	0	66	0	2100	54	0	999	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1858	3172	518	2527	3164	1077	1037	0	0	2154	0	0
Stage 1	1018	1018	-	2127	2127	-	-	-	-	-	-	-
Stage 2	840	2154	-	400	1037	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	6.9	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	78	10	430	30	10	198	376	-	-	104	-	-
Stage 1	193	313	-	31	89	-	-	-	-	-	-	-
Stage 2	295	86	-	547	307	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	52	10	430	25	10	198	376	-	-	104	-	-
Mov Cap-2 Maneuver	113	65	-	28	66	-	-	-	-	-	-	-
Stage 1	193	313	-	31	89	-	-	-	-	-	-	-
Stage 2	197	86	-	457	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	31.9	0	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	376	-	-	430	198	104	-	-
HCM Lane V/C Ratio	-	-	-	0.165	0.331	-	-	-
HCM Control Delay (s)	0	-	-	15	31.9	0	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	1.4	0	-	-

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	23	42	76	36	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	46	83	39	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	213	39	39
Stage 1	39	-	-
Stage 2	174	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	775	1033	1571
Stage 1	983	-	-
Stage 2	856	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	751	1033	1571
Mov Cap-2 Maneuver	751	-	-
Stage 1	983	-	-
Stage 2	829	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	1033	-	-
HCM Lane V/C Ratio	0.029	-	0.024	-	-
HCM Control Delay (s)	7.4	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	12.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	22	4	2	50	65	1985	22	40	940	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	23	4	2	52	68	2068	23	42	979	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2258	3314	515	2690	3328	1045	1029	0	0	2091	0	0
Stage 1	1088	1088	-	2215	2215	-	-	-	-	-	-	-
Stage 2	1170	2226	-	475	1113	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	31	8	432	15	8	225	379	-	-	261	-	-
Stage 1	177	290	-	44	80	-	-	-	-	-	-	-
Stage 2	200	79	-	509	282	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 13	6	432	11	6	225	379	-	-	261	-	-
Mov Cap-2 Maneuver	~ 13	6	-	11	6	-	-	-	-	-	-	-
Stage 1	145	243	-	36	66	-	-	-	-	-	-	-
Stage 2	122	65	-	404	237	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 655.5	213.8	0.5	0.8
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	379	-	-	26	61	261	-
HCM Lane V/C Ratio	0.179	-	-	1.683	0.956	0.16	-
HCM Control Delay (s)	16.6	-	-	\$ 655.5	213.8	21.4	-
HCM Lane LOS	C	-	-	F	F	C	-
HCM 95th %tile Q(veh)	0.6	-	-	5.3	4.5	0.6	-

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

Existing + Project (with Mitigation)
16: Tustin Ave & Catalina Ave

PM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	1.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	42	0	0	56	75	1995	22	40	951	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	44	0	0	58	78	2078	23	42	991	50

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2294	3356	520	2726	3370	1051	1041	0	0	2101	0	0
Stage 1	1099	1099	-	2246	2246	-	-	-	-	-	-	-
Stage 2	1195	2257	-	480	1124	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	30	8	429	15	8	223	374	-	-	258	-	-
Stage 1	174	287	-	42	77	-	-	-	-	-	-	-
Stage 2	194	76	-	505	279	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	16	5	429	10	5	223	374	-	-	258	-	-
Mov Cap-2 Maneuver	16	5	-	10	5	-	-	-	-	-	-	-
Stage 1	138	240	-	33	61	-	-	-	-	-	-	-
Stage 2	113	60	-	380	234	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.3	26.8	0.6	0.8
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	374	-	-	429	223	258	-	-
HCM Lane V/C Ratio	0.209	-	-	0.102	0.262	0.161	-	-
HCM Control Delay (s)	17.1	-	-	14.3	26.8	21.6	-	-
HCM Lane LOS	C	-	-	B	D	C	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.3	1	0.6	-	-

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.522
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	138	743	101	126	898	92	140	128	142	73	114	111
Growth 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
Initial Bse:	138	743	101	126	898	92	140	128	142	73	114	111
Added Vol:	50	20	20	0	21	0	0	0	21	21	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	188	763	121	126	919	92	140	128	163	94	114	111
User 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
PHF 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
PHF Volume:	189	767	122	127	924	92	141	129	164	94	115	112
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	189	767	122	127	924	92	141	129	164	94	115	112
PCE 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
MLF 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
FinalVolume:	189	767	122	127	924	92	141	129	164	94	115	112

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.59	0.41	2.00	2.73	0.27	1.00	1.00	1.00	1.00	1.01	0.99
Final Sat.:	1600	4402	698	3200	4636	464	1600	1700	1700	1600	1723	1677

Capacity Analysis Module:

Vol/Sat:	0.12	0.17	0.17	0.04	0.20	0.20	0.09	0.08	0.10	0.06	0.07	0.07
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.614
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	175	274	169	486	333	50	427	773	115	250	686	370
Growth 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
Initial Bse:	175	274	169	486	333	50	427	773	115	250	686	370
Added Vol:	0	21	0	90	20	0	31	0	0	0	30	41
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	175	295	169	576	353	50	458	773	115	250	716	411
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	179	303	173	591	362	51	470	793	118	256	734	422
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	179	303	173	591	362	51	470	793	118	256	734	422
PCE 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
MLF 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
FinalVolume:	179	303	173	591	362	51	470	793	118	256	734	422
OvlAdjVol:	17									61		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.63	0.37	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4467	633	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.09	0.09	0.18	0.08	0.08	0.15	0.16	0.07	0.08	0.14	0.22
OvlAdjV/S:	0.01									0.03		
Crit Moves:	****			****			****			****		

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
Existing Plus Project Traffic Conditions
With Existing Plus Project Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.585
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: A

Table with columns for Street Name (Tustin Ave, 17th St), Approach (North Bound, South Bound, East Bound, West Bound), Movement (L, T, R), Control, Rights, Min. Green, Y+R, Lanes.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, OvlAdjVol.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, OvlAdjV/S, Crit Moves.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.300
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	82	466	25	98	458	134	53	4	66	14	13	60
Growth 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
Initial Bse:	82	466	25	98	458	134	53	4	66	14	13	60
Added Vol:	0	21	0	0	20	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	487	25	98	478	134	53	4	66	14	13	60
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	86	512	26	103	502	141	56	4	69	15	14	63
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	86	512	26	103	502	141	56	4	69	15	14	63
PCE 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
MLF 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
FinalVolume:	86	512	26	103	502	141	56	4	69	15	14	63

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.34	0.66	0.93	0.07	1.00	0.52	0.48	1.00
Final Sat.:	1600	5100	1700	3200	3983	1117	1581	119	1700	881	819	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.05	0.10	0.02	0.03	0.13	0.13	0.03	0.04	0.04	0.01	0.02	0.04
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.517
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:		17th St											
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2	

Volume Module:

Base Vol:	159	54	90	114	70	66	55	926	83	106	921	78
Growth 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
Initial Bse:	159	54	90	114	70	66	55	926	83	106	921	78
Added Vol:	0	0	10	0	0	0	0	21	0	10	20	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	54	100	114	70	66	55	947	83	116	941	78
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	164	56	103	117	72	68	57	974	85	119	968	80
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	164	56	103	117	72	68	57	974	85	119	968	80
PCE 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
MLF 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
FinalVolume:	164	56	103	117	72	68	57	974	85	119	968	80

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.51	0.49	1.00	2.76	0.24	1.00	2.77	0.23
Final Sat.:	1600	1700	1700	1600	875	825	1600	4689	411	1600	4710	390

Capacity Analysis Module:

Vol/Sat:	0.10	0.03	0.06	0.07	0.08	0.08	0.04	0.21	0.21	0.07	0.21	0.21
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[13.6]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	14	0	0	44	0	1352	76	0	1292	54
Growth 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
Initial Bse:	0	0	14	0	0	44	0	1352	76	0	1292	54
Added Vol:	0	0	0	0	0	30	0	90	0	0	41	52
PasserByVol:	0	0	0	0	0	13	0	0	0	0	0	22
Initial Fut:	0	0	14	0	0	87	0	1442	76	0	1333	128
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	14	0	0	89	0	1468	77	0	1357	130
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	14	0	0	89	0	1468	77	0	1357	130

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	406	xxxx	xxxx	518	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	600	xxxx	xxxx	508	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	600	xxxx	xxxx	508	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.02	xxxx	xxxx	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level of Service Module:

2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.6	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.1	xxxxx	xxxx	13.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.1			13.6			xxxxxxx			xxxxxxx		
ApproachLOS:	B			B			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.632
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	29	28	12	43	837	447	437	1380	47
Growth 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
Initial Bse:	0	0	0	29	28	12	43	837	447	437	1380	47
Added Vol:	0	0	0	0	0	0	0	60	30	0	93	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	29	28	12	43	897	477	437	1473	47
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.00	0.81	0.81	0.81
PHF Volume:	0	0	0	36	34	15	53	1105	0	538	1814	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	36	34	15	53	1105	0	538	1814	58
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	36	34	15	53	1105	0	538	1814	58

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.70	0.30	1.00	3.00	1.00	1.00	2.91	0.09
Final Sat.:	0	0	0	1600	1190	510	1600	5100	1955	1600	4942	158

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.02	0.03	0.03	0.03	0.22	0.00	0.34	0.37	0.37
Crit Moves:				****			****			****		

Existing + Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

MD Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	897	477	437	1473	47	0	0	0	29	28	12
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	53	1107	0	540	1819	58				36	35	15
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81				0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	63	1732	620	595	3241	103				81	56	24
Arrive On Green	0.04	0.38	0.00	0.37	0.72	0.72				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4530	144				1587	1108	475
Grp Volume(v), veh/h	53	1107	0	540	1217	660				36	0	50
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1641				1587	0	1583
Q Serve(g_s), s	2.3	13.9	0.0	22.5	13.3	13.3				1.5	0.0	2.2
Cycle Q Clear(g_c), s	2.3	13.9	0.0	22.5	13.3	13.3				1.5	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.09				1.00		0.30
Lane Grp Cap(c), veh/h	63	1732	620	595	2170	1174				81	0	81
V/C Ratio(X)	0.84	0.64	0.00	0.91	0.56	0.56				0.44	0.00	0.62
Avail Cap(c_a), veh/h	182	1732	620	968	2654	1436				398	0	397
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	17.7	0.0	20.7	4.7	4.7				32.1	0.0	32.4
Incr Delay (d2), s/veh	23.8	0.8	0.0	7.7	0.2	0.4				3.8	0.0	7.5
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	1.4	5.9	0.0	11.0	5.5	6.0				0.8	0.0	1.1
LnGrp Delay(d),s/veh	57.0	18.5	0.0	28.4	4.9	5.1				35.9	0.0	39.9
LnGrp LOS	E	B		C	A	A				D		D
Approach Vol, veh/h		1160			2417						86	
Approach Delay, s/veh		20.2			10.2						38.3	
Approach LOS		C			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			30.6	31.0		8.1	7.3	54.4				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			42.5	26.5		17.5	8.0	61.0				
Max Q Clear Time (g_c+I1), s			24.5	15.9		4.2	4.3	15.3				
Green Ext Time (p_c), s			1.7	9.8		0.2	0.0	34.6				
Intersection Summary												
HCM 2010 Ctrl Delay			14.1									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:

Base Vol:	0	0	630	0	0	415	0	866	0	0	1449	0
Growth 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
Initial Bse:	0	0	630	0	0	415	0	866	0	0	1449	0
Added Vol:	0	0	0	0	0	31	0	60	0	0	62	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	630	0	0	446	0	926	0	0	1511	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.00	0.94	0.94	0.00	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	0	0	0	0	0	0	0	990	0	0	1616	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	990	0	0	1616	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	330	xxxx	xxxx	808	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	672	xxxx	xxxx	328	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	672	xxxx	xxxx	328	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1139	357	0	1449	485
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1139	357	0	1449	485
Added Vol:	0	0	0	0	0	0	0	30	30	0	62	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1169	387	0	1511	485
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.00	0.93	0.93	0.00
PHF Volume:	0	0	0	0	0	0	0	1253	0	0	1620	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1253	0	0	1620	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.589
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Mimi's Café - SR55 NB Ramps						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3





















Volume Module:												
Base Vol:	427	34	395	1	0	111	68	1090	0	0	1360	28
Growth 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
Initial Bse:	427	34	395	1	0	111	68	1090	0	0	1360	28
Added Vol:	31	0	0	0	0	0	0	30	0	0	31	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	458	34	395	1	0	111	68	1120	0	0	1391	28
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	505	37	436	1	0	122	75	1235	0	0	1534	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	505	37	436	1	0	122	75	1235	0	0	1534	31
PCE 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
MLF 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
FinalVolume:	505	37	436	1	0	122	75	1235	0	0	1534	31

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.55	0.11	1.34	0.00	0.01	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2633	195	2271	15	0	1685	1700	5100	0	0	6666	134

Capacity Analysis Module:												
Vol/Sat:	0.19	0.19	0.19	0.07	0.00	0.07	0.04	0.24	0.00	0.00	0.23	0.23
Crit Moves:	****			****			****			****		

Existing + Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

MD Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	1120	0	0	1391	28	458	34	395	1	0	111
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.94	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1394	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1394	1346		1443	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	1231	0	0	1529	31	503	37	434	1	0	122
RTOR Reduction (vph)	0	0	0	0	3	0	0	22	220	0	112	0
Lane Group Flow (vph)	75	1231	0	0	1557	0	337	307	88	0	11	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	5.9	39.9			29.5		24.4	24.4	24.4		7.2	
Effective Green, g (s)	5.9	39.9			29.5		24.4	24.4	24.4		7.2	
Actuated g/C Ratio	0.07	0.47			0.35		0.29	0.29	0.29		0.08	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	109	2135			1983		431	400	386		122	
v/s Ratio Prot	0.05	c0.27			c0.27		c0.22	0.22			c0.01	
v/s Ratio Perm									0.07			
v/c Ratio	0.69	0.58			0.79		0.78	0.77	0.23		0.09	
Uniform Delay, d1	38.7	16.4			24.9		27.9	27.7	23.1		35.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	16.6	0.4			2.1		8.9	8.6	0.3		0.3	
Delay (s)	55.2	16.8			27.0		36.8	36.3	23.4		36.2	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		19.0			27.0			32.4			36.2	
Approach LOS		B			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			26.0				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			85.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			64.8%				ICU Level of Service				C	
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.581
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:	Carroll Wy - Yorba St			Carroll Wy - Yorba St			17th St			17th St		
Base Vol:	211	48	37	60	34	165	144	1121	222	43	1004	36
Growth 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
Initial Bse:	211	48	37	60	34	165	144	1121	222	43	1004	36
Added Vol:	10	0	0	0	0	0	0	20	10	0	21	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	221	48	37	60	34	165	144	1141	232	43	1025	36
User 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
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	247	54	41	67	38	185	161	1276	260	48	1147	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	247	54	41	67	38	185	161	1276	260	48	1147	40
PCE 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
MLF 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
FinalVolume:	247	54	41	67	38	185	161	1276	260	48	1147	40

Saturation Flow Module:	Carroll Wy - Yorba St			Carroll Wy - Yorba St			17th St			17th St		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	3400	1700	1700	1700	290	1410	1700	5100	1700	1700	4927	173

Capacity Analysis Module:	Carroll Wy - Yorba St			Carroll Wy - Yorba St			17th St			17th St		
Vol/Sat:	0.07	0.03	0.02	0.04	0.13	0.13	0.09	0.25	0.15	0.03	0.23	0.23
Crit Moves:	****				****	****	****	****		****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.519
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	70	35	22	66	49	161	184	1023	49	43	838	81
Growth 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
Initial Bse:	70	35	22	66	49	161	184	1023	49	43	838	81
Added Vol:	0	0	0	0	0	0	0	20	0	0	21	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	70	35	22	66	49	161	184	1043	49	43	859	81
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	77	38	24	72	54	176	202	1142	54	47	941	89
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	77	38	24	72	54	176	202	1142	54	47	941	89
PCE 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
MLF 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
FinalVolume:	77	38	24	72	54	176	202	1142	54	47	941	89

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.87	0.13	1.00	2.74	0.26
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4871	229	1700	4661	439

Capacity Analysis Module:

Vol/Sat:	0.05	0.02	0.01	0.04	0.03	0.10	0.12	0.23	0.23	0.03	0.20	0.20
Crit Moves:	****					****	****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 Existing Plus Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.189
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	0	0	1	0

Volume Module:

Base Vol:	0	153	26	17	240	4	2	0	0	42	1	72
Growth 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
Initial Bse:	0	153	26	17	240	4	2	0	0	42	1	72
Added Vol:	0	10	0	0	10	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	163	26	17	250	4	2	0	0	42	1	72
User 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
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	192	31	20	294	5	2	0	0	49	1	85
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	192	31	20	294	5	2	0	0	49	1	85
PCE 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
MLF 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
FinalVolume:	0	192	31	20	294	5	2	0	0	49	1	85

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.72	0.28	1.00	1.97	0.03	1.00	0.00	0.00	0.98	0.02	1.00
Final Sat.:	1700	2932	468	1700	3346	54	1700	0	0	1660	40	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.07	0.07	0.01	0.09	0.09	0.00	0.00	0.00	0.03	0.03	0.05
Crit Moves:	****			****			****			****		

Intersection

Int Delay, s/veh 17.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	10	57	0	71	9	1044	44	89	862	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	10	58	0	72	9	1065	45	91	880	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1615	2193	442	1727	2172	555	885	0	0	1110	0	0
Stage 1	1064	1064	-	1106	1106	-	-	-	-	-	-	-
Stage 2	551	1129	-	621	1066	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	69	45	563	~ 57	46	475	760	-	-	625	-	-
Stage 1	238	298	-	224	284	-	-	-	-	-	-	-
Stage 2	486	277	-	442	297	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	51	38	563	~ 49	39	475	760	-	-	625	-	-
Mov Cap-2 Maneuver	51	38	-	~ 49	39	-	-	-	-	-	-	-
Stage 1	235	255	-	221	281	-	-	-	-	-	-	-
Stage 2	407	274	-	371	254	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.1	282.9	0.1	1.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	760	-	-	211	98	625	-	-
HCM Lane V/C Ratio	0.012	-	-	0.058	1.333	0.145	-	-
HCM Control Delay (s)	9.8	-	-	23.1	282.9	11.7	-	-
HCM Lane LOS	A	-	-	C	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	9.3	0.5	-	-

Notes

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

Existing + Project (with Mitigation)
13: Tustin Ave & Annie's Salon/North Dwy

MD Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	12	0	0	128	9	1044	44	89	901	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	0	0	131	9	1065	45	91	919	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1548	2233	462	1747	2212	555	924	0	0	1110	0	0
Stage 1	1104	1104	-	1106	1106	-	-	-	-	-	-	-
Stage 2	444	1129	-	641	1106	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	97	42	547	71	43	407	735	-	-	346	-	-
Stage 1	220	285	-	172	284	-	-	-	-	-	-	-
Stage 2	531	277	-	417	284	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	52	31	547	55	31	407	735	-	-	346	-	-
Mov Cap-2 Maneuver	52	31	-	55	31	-	-	-	-	-	-	-
Stage 1	217	210	-	170	281	-	-	-	-	-	-	-
Stage 2	356	274	-	300	209	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	18	0.1	1.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	735	-	-	547	407	346	-	-
HCM Lane V/C Ratio	0.012	-	-	0.022	0.321	0.262	-	-
HCM Control Delay (s)	10	-	-	11.7	18	19.1	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.4	1	-	-

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	0	60	0	0	114	7	993	89	0	905	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	61	0	0	115	7	1003	90	0	914	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1443	2034	470	1428	2001	546	939	0	0	1093	0	0
Stage 1	927	927	-	1062	1062	-	-	-	-	-	-	-
Stage 2	516	1107	-	366	939	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	114	56	462	116	59	482	419	-	-	634	-	-
Stage 1	229	345	-	233	298	-	-	-	-	-	-	-
Stage 2	494	284	-	592	341	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	84	54	462	97	56	482	419	-	-	634	-	-
Mov Cap-2 Maneuver	159	163	-	177	166	-	-	-	-	-	-	-
Stage 1	219	345	-	223	285	-	-	-	-	-	-	-
Stage 2	359	272	-	514	341	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	14.8	0.4	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	419	-	-	462	482	634	-	-
HCM Lane V/C Ratio	0.017	-	-	0.131	0.239	-	-	-
HCM Control Delay (s)	13.7	0.3	-	14	14.8	0	-	-
HCM Lane LOS	B	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.9	0	-	-

Existing + Project (with Mitigation)
14: Tustin Ave & 7-Eleven/South Dwy

MD Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	73	0	0	114	0	993	89	0	905	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	74	0	0	115	0	1003	90	0	914	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1328	2020	470	1414	1987	546	939	0	0	1093	0	0
Stage 1	927	927	-	1048	1048	-	-	-	-	-	-	-
Stage 2	401	1093	-	366	939	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	163	58	462	145	60	413	419	-	-	353	-	-
Stage 1	224	345	-	184	303	-	-	-	-	-	-	-
Stage 2	546	288	-	573	341	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	118	58	462	122	60	413	419	-	-	353	-	-
Mov Cap-2 Maneuver	178	169	-	160	174	-	-	-	-	-	-	-
Stage 1	224	345	-	184	303	-	-	-	-	-	-	-
Stage 2	394	288	-	482	341	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	14.3			17.1			0			0		
HCM LOS	B			C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	419	-	-	462	413	353	-	-
HCM Lane V/C Ratio	-	-	-	0.16	0.279	-	-	-
HCM Control Delay (s)	0	-	-	14.3	17.1	0	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	1.1	0	-	-

Intersection

Int Delay, s/veh 4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	43	74	54	44	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	80	59	48	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	268	48	48
Stage 1	48	-	-
Stage 2	220	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	721	1021	1559
Stage 1	974	-	-
Stage 2	817	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	683	1021	1559
Mov Cap-2 Maneuver	683	-	-
Stage 1	974	-	-
Stage 2	774	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	4.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1559	-	1021	-	-
HCM Lane V/C Ratio	0.052	-	0.046	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection												
Int Delay, s/veh	10											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	27	2	44	20	2	55	90	1080	17	39	987	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	2	46	21	2	57	94	1125	18	41	1028	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1875	2454	529	1815	2461	571	1058	0	0	1143	0	0
Stage 1	1124	1124	-	1321	1321	-	-	-	-	-	-	-
Stage 2	751	1330	-	494	1140	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	58	30	423	63	30	464	367	-	-	607	-	-
Stage 1	167	279	-	162	224	-	-	-	-	-	-	-
Stage 2	359	222	-	495	274	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	36	21	423	40	21	464	367	-	-	607	-	-
Mov Cap-2 Maneuver	36	21	-	40	21	-	-	-	-	-	-	-
Stage 1	124	260	-	121	167	-	-	-	-	-	-	-
Stage 2	231	165	-	408	255	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	193.1	100.8	1.4	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	367	-	-	77	108	607	-
HCM Lane V/C Ratio	0.255	-	-	0.988	0.743	0.067	-
HCM Control Delay (s)	18.1	-	-	193.1	100.8	11.4	-
HCM Lane LOS	C	-	-	F	F	B	-
HCM 95th %tile Q(veh)	1	-	-	5.3	4	0.2	-

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	73	0	0	77	110	1099	17	39	1007	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	76	0	0	80	115	1145	18	41	1049	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1947	2537	540	1884	2543	581	1079	0	0	1163	0	0
Stage 1	1145	1145	-	1383	1383	-	-	-	-	-	-	-
Stage 2	802	1392	-	501	1160	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	51	27	416	57	27	457	358	-	-	596	-	-
Stage 1	161	272	-	148	209	-	-	-	-	-	-	-
Stage 2	334	207	-	490	268	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	30	17	416	33	17	457	358	-	-	596	-	-
Mov Cap-2 Maneuver	30	17	-	33	17	-	-	-	-	-	-	-
Stage 1	109	253	-	100	142	-	-	-	-	-	-	-
Stage 2	187	141	-	373	250	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.6	14.5	1.8	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	358	-	-	416	457	596	-	-
HCM Lane V/C Ratio	0.32	-	-	0.183	0.176	0.068	-	-
HCM Control Delay (s)	19.7	-	-	15.6	14.5	11.5	-	-
HCM Lane LOS	C	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	1.4	-	-	0.7	0.6	0.2	-	-

Appendix G – Opening Year 2018 Without Project Conditions Intersection Analysis Worksheets

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.874
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	62	405	105	112	2600	93	100	288	187	112	202	109
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	63	413	107	114	2652	95	102	294	191	114	206	111
Added Vol:	2	19	2	0	11	1	2	1	4	2	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	65	432	109	114	2663	96	104	295	195	116	207	111
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	67	446	113	118	2748	99	107	304	201	120	214	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	67	446	113	118	2748	99	107	304	201	120	214	115
PCE 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
MLF 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
FinalVolume:	67	446	113	118	2748	99	107	304	201	120	214	115

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.40	0.60	2.00	2.90	0.10	1.00	1.20	0.80	1.00	1.30	0.70
Final Sat.:	1600	4072	1028	3200	4923	177	1600	2047	1353	1600	2212	1188

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.11	0.11	0.04	0.56	0.56	0.07	0.15	0.15	0.07	0.10	0.10
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.784
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:

Base Vol:	105	189	209	549	1769	20	180	673	132	541	760	206
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	107	193	213	560	1805	20	184	687	135	552	775	210
Added Vol:	12	13	6	2	7	8	9	25	9	3	11	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	206	219	562	1812	28	193	712	144	555	786	211
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	123	213	226	581	1871	29	199	735	148	573	812	218
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	213	226	581	1871	29	199	735	148	573	812	218
PCE 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
MLF 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
FinalVolume:	123	213	226	581	1871	29	199	735	148	573	812	218
OvlAdjVol:	0									0		

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	5021	79	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.04	0.06	0.12	0.18	0.37	0.37	0.06	0.14	0.09	0.18	0.16	0.11
OvlAdjV/S:	0.00									0.00		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.608
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	32	405	131	210	2151	75	25	16	79	26	6	39
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	33	413	134	214	2194	77	26	16	81	27	6	40
Added Vol:	0	30	0	0	19	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	443	134	214	2213	77	26	16	81	27	6	40
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	34	465	140	225	2320	80	27	17	84	28	6	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	465	140	225	2320	80	27	17	84	28	6	42
PCE 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
MLF 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
FinalVolume:	34	465	140	225	2320	80	27	17	84	28	6	42

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.90	0.10	0.61	0.39	1.00	0.81	0.19	1.00
Final Sat.:	1600	5100	1700	3200	4930	170	1037	663	1700	1381	319	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.02	0.09	0.08	0.07	0.47	0.47	0.02	0.03	0.05	0.02	0.02	0.02
Crit Moves:	****			****			****	****	****	****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.543
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name: Sherry Ln - Cabrillo Park Ave						17th St							
Approach: North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	119	39	85	78	94	29	11	769	221	165	838	30
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	121	40	87	80	96	30	11	784	225	168	855	31
Added Vol:	11	0	10	0	0	0	0	31	4	3	24	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	40	97	80	96	30	11	815	229	171	879	31
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	139	42	102	84	101	31	12	858	242	180	925	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	42	102	84	101	31	12	858	242	180	925	32
PCE 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
MLF 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
FinalVolume:	139	42	102	84	101	31	12	858	242	180	925	32

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.76	0.24	1.00	2.34	0.66	1.00	2.90	0.10
Final Sat.:	1600	1700	1700	1600	1299	401	1600	3980	1120	1600	4928	172

Capacity Analysis Module:

Vol/Sat:	0.09	0.02	0.06	0.05	0.08	0.08	0.01	0.22	0.22	0.11	0.19	0.19
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.9]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	107	0	0	22	0	1414	22	0	1495	33
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	109	0	0	22	0	1442	22	0	1525	34
Added Vol:	0	0	0	0	0	0	0	32	0	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	109	0	0	22	0	1474	22	0	1540	34
User 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
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	114	0	0	23	0	1541	23	0	1609	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	114	0	0	23	0	1541	23	0	1609	35

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	397	xxxx	xxxx	554	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	608	xxxx	xxxx	481	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	608	xxxx	xxxx	481	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.19	xxxx	xxxx	0.05	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.7	xxxx	xxxx	0.2	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.3	xxxxx	xxxx	12.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.3			12.9			xxxxxxx			xxxxxxx		
ApproachLOS:	B			B			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.631
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2






















Volume Module:												
Base Vol:	0	0	0	42	224	22	18	932	582	322	1498	43
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	43	229	22	18	951	594	328	1528	44
Added Vol:	0	0	0	0	0	0	0	30	2	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	43	229	22	18	981	596	328	1543	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.94
PHF Volume:	0	0	0	46	244	24	20	1046	0	350	1645	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	46	244	24	20	1046	0	350	1645	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	46	244	24	20	1046	0	350	1645	47

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.91	0.09	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	0	0	0	1600	1548	152	1600	5100	1955	1600	4959	141

Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.03	0.16	0.16	0.01	0.21	0.00	0.22	0.33	0.33
Crit Moves:				****			****			****		

Opening Year 2018 without Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

AM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	981	596	328	1543	44	0	0	0	43	229	22
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	19	1044	0	349	1641	47				46	244	23
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	28	1690	605	396	2745	79				317	299	28
Arrive On Green	0.02	0.37	0.00	0.25	0.60	0.60				0.20	0.20	0.20
Sat Flow, veh/h	1587	4550	1629	1587	4547	130				1587	1500	141
Grp Volume(v), veh/h	19	1044	0	349	1095	593				46	0	267
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1644				1587	0	1642
Q Serve(g_s), s	0.9	14.1	0.0	15.9	16.8	16.9				1.8	0.0	11.7
Cycle Q Clear(g_c), s	0.9	14.1	0.0	15.9	16.8	16.9				1.8	0.0	11.7
Prop In Lane	1.00		1.00	1.00		0.08				1.00		0.09
Lane Grp Cap(c), veh/h	28	1690	605	396	1831	992				317	0	328
V/C Ratio(X)	0.69	0.62	0.00	0.88	0.60	0.60				0.15	0.00	0.81
Avail Cap(c_a), veh/h	124	1722	617	685	2220	1203				538	0	556
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	19.3	0.0	27.2	9.2	9.3				24.8	0.0	28.8
Incr Delay (d2), s/veh	26.1	0.7	0.0	6.8	0.3	0.6				0.2	0.0	4.9
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	0.6	6.0	0.0	7.7	7.1	7.7				0.8	0.0	5.7
LnGrp Delay(d),s/veh	62.8	20.0	0.0	34.0	9.6	9.8				25.0	0.0	33.7
LnGrp LOS	E	B		C	A	A				C		C
Approach Vol, veh/h		1063			2037						313	
Approach Delay, s/veh		20.7			13.8						32.5	
Approach LOS		C			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			23.3	32.5		19.5	5.8	50.0				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			32.5	28.5		25.5	5.9	55.1				
Max Q Clear Time (g_c+I1), s			17.9	16.1		13.7	2.9	18.9				
Green Ext Time (p_c), s			0.9	10.9		1.3	0.0	26.6				
Intersection Summary												
HCM 2010 Ctrl Delay			17.7									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:

Base Vol:	0	0	666	0	0	395	0	974	0	0	1468	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	679	0	0	403	0	994	0	0	1498	0
Added Vol:	0	0	0	0	0	1	0	30	0	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	679	0	0	404	0	1024	0	0	1513	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.00	0.85	0.85	0.00	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	0	0	0	0	1203	0	0	1777	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1203	0	0	1777	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	401	xxxx	xxxx	889	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	605	xxxx	xxxx	290	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	605	xxxx	xxxx	290	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound				South Bound				East Bound			West Bound		
Movement:	L	T	R		L	T	R		L	T	R	L	T	R
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled		
Rights:	Include				Include				Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	0	0	1331	309	0	1468	727
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	0	0	0	0	0	0	1358	315	0	1498	742
Added Vol:	0	0	0	0	0	0	0	0	0	30	0	0	15	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	0	0	1388	315	0	1513	742
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	1481	0	0	1614	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	1481	0	0	1614	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.523
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	328	27	356	1	0	99	28	1299	0	0	1759	36
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	335	28	363	1	0	101	29	1325	0	0	1794	37
Added Vol:	2	0	0	0	0	0	0	30	0	0	13	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	337	28	363	1	0	101	29	1355	0	0	1807	37
User Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF 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
PHF Volume:	324	27	350	1	0	97	28	1306	0	0	1742	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	324	27	350	1	0	97	28	1306	0	0	1742	35
PCE 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
MLF 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
FinalVolume:	324	27	350	1	0	97	28	1306	0	0	1742	35

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.39	0.11	1.50	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2360	193	2547	17	0	1683	1700	5100	0	0	6665	135

Capacity Analysis Module:

Vol/Sat:	0.14	0.14	0.14	0.06	0.00	0.06	0.02	0.26	0.00	0.00	0.26	0.26
Crit Moves:	****			****			****			****		

Opening Year 2018 without Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

AM Peak
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	1355	0	0	1807	37	337	28	363	1	0	101
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.92	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1371	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1371	1346		1443	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	30	1411	0	0	1882	39	351	29	378	1	0	105
RTOR Reduction (vph)	0	0	0	0	2	0	0	41	185	0	99	0
Lane Group Flow (vph)	30	1411	0	0	1919	0	263	212	57	0	7	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	2.3	44.0			37.2		19.5	19.5	19.5		5.1	
Effective Green, g (s)	2.3	44.0			37.2		19.5	19.5	19.5		5.1	
Actuated g/C Ratio	0.03	0.54			0.45		0.24	0.24	0.24		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	44	2438			2589		357	325	319		89	
v/s Ratio Prot	0.02	c0.31			c0.34		c0.17	0.15			c0.00	
v/s Ratio Perm									0.04			
v/c Ratio	0.68	0.58			0.74		0.74	0.65	0.18		0.07	
Uniform Delay, d1	39.5	12.8			18.5		28.9	28.2	24.9		36.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	35.7	0.3			1.2		7.7	4.6	0.3		0.4	
Delay (s)	75.2	13.2			19.7		36.6	32.9	25.2		36.6	
Level of Service	E	B			B		D	C	C		D	
Approach Delay (s)		14.4			19.7			31.7			36.6	
Approach LOS		B			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			20.5				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			82.1			Sum of lost time (s)		18.0				
Intersection Capacity Utilization			64.3%			ICU Level of Service		C				
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.547
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	130	22	21	48	47	98	58	1328	270	93	1557	42
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	133	22	21	49	48	100	59	1355	275	95	1588	43
Added Vol:	2	0	0	0	0	0	0	28	2	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	22	21	49	48	100	59	1383	277	95	1599	43
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	138	23	22	50	49	103	61	1423	285	98	1645	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	23	22	50	49	103	61	1423	285	98	1645	44
PCE 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
MLF 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
FinalVolume:	138	23	22	50	49	103	61	1423	285	98	1645	44

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.32	0.68	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	3400	1700	1700	1700	551	1149	1700	5100	1700	1700	4967	133

Capacity Analysis Module:

Vol/Sat:	0.04	0.01	0.01	0.03	0.09	0.09	0.04	0.28	0.17	0.06	0.33	0.33
Crit Moves:	****			****			****			****		

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.598
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	20	31	21	228	262	280	106	1300	35	46	1389	57
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	20	32	21	233	267	286	108	1326	36	47	1417	58
Added Vol:	0	0	0	0	0	0	0	28	0	0	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	32	21	233	267	286	108	1354	36	47	1428	58
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	21	32	22	238	274	292	111	1386	37	48	1462	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	32	22	238	274	292	111	1386	37	48	1462	60
PCE 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
MLF 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
FinalVolume:	21	32	22	238	274	292	111	1386	37	48	1462	60

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.88	0.12
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4969	131	1700	4900	200

Capacity Analysis Module:

Vol/Sat:	0.01	0.02	0.01	0.14	0.16	0.17	0.07	0.28	0.28	0.03	0.30	0.30
Crit Moves:	****					****	****				****	

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.361
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	0	1	0	1	0

Volume Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Base Vol:	0	101	44	14	357	2	0	1	0	255	0	50
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	103	45	14	364	2	0	1	0	260	0	51
Added Vol:	0	2	0	0	2	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	105	45	14	366	2	0	1	0	260	0	51
User 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
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	0	125	53	17	435	2	0	1	0	309	0	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	125	53	17	435	2	0	1	0	309	0	61
PCE 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
MLF 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
FinalVolume:	0	125	53	17	435	2	0	1	0	309	0	61

Saturation Flow Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.40	0.60	1.00	1.99	0.01	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1700	2382	1018	1700	3381	19	0	1700	0	1700	0	1700

Capacity Analysis Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Vol/Sat:	0.00	0.05	0.05	0.01	0.13	0.13	0.00	0.00	0.00	0.18	0.00	0.04
Crit Moves:	****			****			****			****		

Opening Year 2018 without Project
13: Tustin Ave & Annie's Salon/North Dwy

AM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	0	1	561	0	0	2391	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	0	1	597	0	0	2544	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2849	3147	1277	1871	3152	298	2553	0	0	597	0	0
Stage 1	2548	2548	-	599	599	-	-	-	-	-	-	-
Stage 2	301	599	-	1272	2553	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	11	157	44	11	698	171	-	-	976	-	-
Stage 1	27	54	-	455	489	-	-	-	-	-	-	-
Stage 2	683	489	-	177	53	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	8	11	157	38	11	698	171	-	-	976	-	-
Mov Cap-2 Maneuver	8	11	-	38	11	-	-	-	-	-	-	-
Stage 1	27	54	-	452	486	-	-	-	-	-	-	-
Stage 2	679	486	-	155	53	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.1	0	0	0
HCM LOS	D	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	171	-	-	157	-	976	-
HCM Lane V/C Ratio	0.006	-	-	0.122	-	-	-
HCM Control Delay (s)	26.2	-	-	31.1	0	0	-
HCM Lane LOS	D	-	-	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-

Intersection												
Int Delay, s/veh	0.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	34	0	0	0	1	560	0	0	2370	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	0	1	596	0	0	2521	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2838	3136	1278	1607	3153	298	2555	0	0	596	0	0
Stage 1	2538	2538	-	598	598	-	-	-	-	-	-	-
Stage 2	300	598	-	1009	2555	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	12	11	135	88	11	698	65	-	-	976	-	-
Stage 1	16	54	-	442	489	-	-	-	-	-	-	-
Stage 2	660	489	-	237	53	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	12	11	135	63	11	698	65	-	-	976	-	-
Mov Cap-2 Maneuver	15	46	-	135	44	-	-	-	-	-	-	-
Stage 1	16	54	-	432	478	-	-	-	-	-	-	-
Stage 2	645	478	-	174	53	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	41.2	0	0.8	0
HCM LOS	E	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	65	-	-	135	-	976	-
HCM Lane V/C Ratio	0.016	-	-	0.268	-	-	-
HCM Control Delay (s)	61.3	0.7	-	41.2	0	0	-
HCM Lane LOS	F	A	-	E	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	34	22	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	37	24	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	61	24	24
Stage 1	24	-	-
Stage 2	37	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	945	1052	1591
Stage 1	999	-	-
Stage 2	985	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	945	1052	1591
Mov Cap-2 Maneuver	945	-	-
Stage 1	999	-	-
Stage 2	985	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1591	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	36.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	29	4	0	59	18	482	11	73	2671	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	30	4	0	60	18	492	11	74	2726	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3169	3426	1374	1773	3432	252	2749	0	0	503	0	0
Stage 1	2886	2886	-	534	534	-	-	-	-	-	-	-
Stage 2	283	540	-	1239	2898	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 7	7	116	68	7	748	51	-	-	1058	-	-
Stage 1	~ 8	35	-	482	523	-	-	-	-	-	-	-
Stage 2	675	519	-	170	35	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 4	4	116	35	4	748	51	-	-	1058	-	-
Mov Cap-2 Maneuver	~ 4	4	-	35	4	-	-	-	-	-	-	-
Stage 1	~ 5	33	-	312	338	-	-	-	-	-	-	-
Stage 2	402	336	-	118	33	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 2492.1	18.7	3.9	0.2
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	51	-	-	10	326	1058	-	-
HCM Lane V/C Ratio	0.36	-	-	4.898	0.197	0.07	-	-
HCM Control Delay (s)	111	-	-	\$ 2492.1	18.7	8.7	-	-
HCM Lane LOS	F	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	1.3	-	-	7.4	0.7	0.2	-	-

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

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.669
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	189	1571	129	175	898	94	142	175	128	74	222	141
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	193	1603	132	179	916	96	145	179	131	75	226	144
Added Vol:	6	18	4	0	23	2	1	1	4	3	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	199	1621	136	179	939	98	146	180	135	78	228	144
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	205	1671	140	184	968	101	150	185	139	81	236	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	205	1671	140	184	968	101	150	185	139	81	236	148
PCE 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
MLF 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
FinalVolume:	205	1671	140	184	968	101	150	185	139	81	236	148

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.77	0.23	2.00	2.72	0.28	1.00	1.14	0.86	1.00	1.23	0.77
Final Sat.:	1600	4706	394	3200	4619	481	1600	1943	1457	1600	2086	1314

Capacity Analysis Module:

Vol/Sat:	0.13	0.35	0.35	0.06	0.21	0.21	0.09	0.10	0.10	0.05	0.11	0.11
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.954
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:

Base Vol:	315	1188	564	451	444	41	419	917	126	231	973	375
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	321	1212	575	460	453	42	427	935	129	236	993	383
Added Vol:	13	11	6	1	15	14	13	23	14	7	31	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	334	1223	581	461	468	56	440	958	143	243	1024	385
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	359	1312	624	495	502	60	473	1028	153	260	1098	413
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	359	1312	624	495	502	60	473	1028	153	260	1098	413
PCE 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
MLF 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
FinalVolume:	359	1312	624	495	502	60	473	1028	153	260	1098	413
OvlAdjVol:			465									110

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.68	0.32	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4556	544	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.11	0.39	0.32	0.15	0.11	0.11	0.15	0.20	0.09	0.08	0.22	0.21
OvlAdjV/S:			0.24									0.06
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.595
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	93	1509	73	98	531	105	64	3	65	51	14	217
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	95	1539	74	100	542	107	65	3	66	52	14	221
Added Vol:	0	30	0	0	36	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	1569	74	100	578	107	65	3	66	52	14	221
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	102	1684	80	107	620	115	70	3	71	56	15	238
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	1684	80	107	620	115	70	3	71	56	15	238
PCE 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
MLF 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
FinalVolume:	102	1684	80	107	620	115	70	3	71	56	15	238

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.53	0.47	0.96	0.04	1.00	0.78	0.22	1.00
Final Sat.:	1600	5100	1700	3200	4302	798	1624	76	1700	1334	366	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.33	0.05	0.03	0.14	0.14	0.04	0.04	0.04	0.03	0.04	0.14
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.640
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name: Sherry Ln - Cabrillo Park Ave						17th St							
Approach: North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	285	125	147	126	60	48	42	960	97	127	1195	63
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	128	150	129	61	49	43	979	99	130	1219	64
Added Vol:	8	0	7	0	0	0	0	31	12	11	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	299	128	157	129	61	49	43	1010	111	141	1254	64
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	315	135	166	136	65	52	45	1066	117	148	1323	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	315	135	166	136	65	52	45	1066	117	148	1323	68
PCE 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
MLF 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
FinalVolume:	315	135	166	136	65	52	45	1066	117	148	1323	68

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.56	0.44	1.00	2.70	0.30	1.00	2.85	0.15
Final Sat.:	1600	1700	1700	1600	944	756	1600	4595	505	1600	4851	249

Capacity Analysis Module:

Vol/Sat:	0.20	0.08	0.10	0.08	0.07	0.07	0.03	0.23	0.23	0.09	0.27	0.27
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[14.1]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	11		0	0	36		0	1747	213	0	1557	76
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	11		0	0	37		0	1782	217	0	1588	78
Added Vol:	0	0	0		0	0	0		0	30	0	0	40	0
PasserByVol:	0	0	0		0	0	0		0	0	0	0	0	0
Initial Fut:	0	0	11		0	0	37		0	1812	217	0	1628	78
User 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
PHF Adj:	0.93	0.93	0.93		0.93	0.93	0.93		0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	12		0	0	39		0	1944	233	0	1747	83
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0	0
FinalVolume:	0	0	12		0	0	39		0	1944	233	0	1747	83

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflict Vol:	xxxx	xxxx	603		xxxx	xxxx	624		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	447		xxxx	xxxx	433		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	447		xxxx	xxxx	433		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.03		xxxx	xxxx	0.09		xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	0.1		xxxx	xxxx	0.3		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.3		xxxxx	xxxx	14.1		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B		*	*	B		*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*		*	*	*		*	*	*	*	*	*
ApproachDel:	13.3				14.1				xxxxxxx			xxxxxxx		
ApproachLOS:	B				B				*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.597
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	13	39	11	43	1164	514	400	1519	63
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	13	40	11	44	1187	524	408	1550	64
Added Vol:	0	0	0	0	0	0	0	26	4	0	40	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	13	40	11	44	1213	528	408	1590	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96
PHF Volume:	0	0	0	14	42	12	46	1269	0	427	1663	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	42	12	46	1269	0	427	1663	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	42	12	46	1269	0	427	1663	67

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.78	0.22	1.00	3.00	1.00	1.00	2.88	0.12
Final Sat.:	0	0	0	1600	1326	374	1600	5100	1955	1600	4902	198

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.03	0.03	0.03	0.25	0.00	0.27	0.34	0.34
Crit Moves:				****			****			****		

Opening Year 2018 without Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

PM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	1213	528	408	1590	64	0	0	0	13	40	11
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	46	1264	0	425	1656	67				14	42	11
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	54	2063	739	480	3236	131				74	59	15
Arrive On Green	0.03	0.45	0.00	0.30	0.72	0.72				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4487	181				1587	1274	334
Grp Volume(v), veh/h	46	1264	0	425	1119	604				14	0	53
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1635				1587	0	1608
Q Serve(g_s), s	2.0	14.3	0.0	17.4	11.1	11.1				0.6	0.0	2.2
Cycle Q Clear(g_c), s	2.0	14.3	0.0	17.4	11.1	11.1				0.6	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.11				1.00		0.21
Lane Grp Cap(c), veh/h	54	2063	739	480	2188	1179				74	0	75
V/C Ratio(X)	0.85	0.61	0.00	0.89	0.51	0.51				0.19	0.00	0.71
Avail Cap(c_a), veh/h	175	2171	777	851	2739	1476				408	0	413
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	32.7	14.1	0.0	22.6	4.2	4.2				31.2	0.0	32.0
Incr Delay (d2), s/veh	28.5	0.5	0.0	5.7	0.2	0.3				1.2	0.0	11.8
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	1.3	6.1	0.0	8.3	4.6	5.0				0.3	0.0	1.2
LnGrp Delay(d),s/veh	61.2	14.6	0.0	28.3	4.4	4.5				32.5	0.0	43.8
LnGrp LOS	E	B		C	A	A				C		D
Approach Vol, veh/h		1310			2148						67	
Approach Delay, s/veh		16.2			9.2						41.4	
Approach LOS		B			A						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			25.1	35.4		7.7	6.8	53.6				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			36.5	32.5		17.5	7.5	61.5				
Max Q Clear Time (g_c+I1), s			19.4	16.3		4.2	4.0	13.1				
Green Ext Time (p_c), s			1.2	14.4		0.2	0.0	36.0				
Intersection Summary												
HCM 2010 Ctrl Delay			12.4									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
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Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound				
Base Vol:	0	0	767	0	0	0	435	0	1177	0	0	1547	0	0	1547	0	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	782	0	0	0	444	0	1201	0	0	1578	0	0	1578	0	0
Added Vol:	0	0	0	0	0	0	3	0	26	0	0	38	0	0	38	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	782	0	0	0	447	0	1227	0	0	1616	0	0	1616	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.00	0.93	0.93	0.93	0.00	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	0	0	0	0	0	0	1320	0	0	1740	0	0	1740	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	1320	0	0	1740	0	0	1740	0	0

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxxx	xxxx	440	xxxxx	xxxxx	xxxx	870	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx
Potent Cap.:	xxxxx	xxxx	570	xxxxx	xxxxx	xxxx	299	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx
Move Cap.:	xxxxx	xxxx	570	xxxxx	xxxxx	xxxx	299	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx
Volume/Cap:	xxxxx	xxxx	0.00	xxxxx	xxxxx	xxxx	0.00	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx
Control Del:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	
Shared Cap.:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx
SharedQueue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx				xxxxxxx	xxxxxxx			xxxxxxx				xxxxxxx
ApproachLOS:	*			*				*	*			*				*

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
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Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1458	486	0	1547	826
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	0	0	0	0	1487	496	0	1578	843
Added Vol:	0	0	0	0	0	0	0	23	3	0	38	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1510	499	0	1616	843
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.00	0.95	0.95	0.00
PHF Volume:	0	0	0	0	0	0	0	1586	0	0	1698	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1586	0	0	1698	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx	
ApproachLOS:	*		*		*		*		*		*	

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Mimi's Café - SR55 NB Ramps						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3





















Volume Module:	Mimi's Café - SR55 NB Ramps			Mimi's Café - SR55 SB Ramps			17th St East			17th St West		
Base Vol:	404	24	199	2	0	98	64	1387	0	0	1906	35
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	412	24	203	2	0	100	65	1415	0	0	1944	36
Added Vol:	5	0	0	0	0	0	0	23	0	0	33	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	417	24	203	2	0	100	65	1438	0	0	1977	36
User 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
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	442	26	215	2	0	106	69	1523	0	0	2095	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	442	26	215	2	0	106	69	1523	0	0	2095	38
PCE 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
MLF 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
FinalVolume:	442	26	215	2	0	106	69	1523	0	0	2095	38

Saturation Flow Module:	Mimi's Café - SR55 NB Ramps			Mimi's Café - SR55 SB Ramps			17th St East			17th St West		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.94	0.06	1.00	0.02	0.00	0.98	1.00	3.00	0.00	0.00	3.93	0.07
Final Sat.:	3300	100	1700	34	0	1666	1700	5100	0	0	6679	121

Capacity Analysis Module:	Mimi's Café - SR55 NB Ramps			Mimi's Café - SR55 SB Ramps			17th St East			17th St West		
Vol/Sat:	0.13	0.26	0.13	0.06	0.00	0.06	0.04	0.30	0.00	0.00	0.31	0.31
Crit Moves:	****			****			****			****		

Opening Year 2018 without Project
 9: SR-55 SB Ramps/Mimi's Cafe & 17th St

PM Peak
 HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	1438	0	0	1977	36	417	24	203	2	0	100
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.99	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (prot)	1583	4550			5718		1504	1438	1346		1444	
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (perm)	1583	4550			5718		1504	1438	1346		1444	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	69	1530	0	0	2103	38	444	26	216	2	0	106
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	153	0	101	0
Lane Group Flow (vph)	69	1530	0	0	2139	0	249	240	41	0	7	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	4.8	49.0			39.7		18.2	18.2	18.2		5.3	
Effective Green, g (s)	4.8	49.0			39.7		18.2	18.2	18.2		5.3	
Actuated g/C Ratio	0.06	0.57			0.46		0.21	0.21	0.21		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	88	2592			2639		318	304	284		88	
v/s Ratio Prot	0.04	c0.34			c0.37		0.17	c0.17			c0.00	
v/s Ratio Perm									0.03			
v/c Ratio	0.78	0.59			0.81		0.78	0.79	0.14		0.08	
Uniform Delay, d1	40.1	12.0			19.9		32.0	32.1	27.6		38.0	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	35.5	0.4			2.0		11.9	12.7	0.2		0.4	
Delay (s)	75.6	12.4			21.9		43.9	44.8	27.8		38.4	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		15.1			21.9			39.7			38.4	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			22.6				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			86.0				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			70.5%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.675
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:	Carroll Wy - Yorba St			Carroll Wy - Yorba St			17th St			17th St		
Base Vol:	323	83	92	102	26	133	127	1276	182	44	1500	31
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	329	85	94	104	27	136	130	1302	186	45	1530	32
Added Vol:	3	0	0	0	0	0	0	21	3	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	332	85	94	104	27	136	130	1323	189	45	1560	32
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	357	91	101	112	28	146	139	1421	203	48	1676	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	357	91	101	112	28	146	139	1421	203	48	1676	34
PCE 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
MLF 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
FinalVolume:	357	91	101	112	28	146	139	1421	203	48	1676	34

Saturation Flow Module:	Carroll Wy - Yorba St			Carroll Wy - Yorba St			17th St			17th St		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.16	0.84	1.00	3.00	1.00	1.00	2.94	0.06
Final Sat.:	3400	1700	1700	1700	278	1422	1700	5100	1700	1700	4999	101

Capacity Analysis Module:	Carroll Wy - Yorba St			Carroll Wy - Yorba St			17th St			17th St		
Vol/Sat:	0.11	0.05	0.06	0.07	0.10	0.10	0.08	0.28	0.12	0.03	0.34	0.34
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.650
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	80	163	30	81	72	140	192	1190	46	56	1380	205
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	82	166	31	83	73	143	196	1214	47	57	1408	209
Added Vol:	0	0	0	0	0	0	0	21	0	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	166	31	83	73	143	196	1235	47	57	1438	209
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	84	171	31	85	75	147	201	1268	48	59	1476	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	171	31	85	75	147	201	1268	48	59	1476	215
PCE 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
MLF 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
FinalVolume:	84	171	31	85	75	147	201	1268	48	59	1476	215

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.89	0.11	1.00	2.62	0.38
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4913	187	1700	4452	648

Capacity Analysis Module:

Vol/Sat:	0.05	0.10	0.02	0.05	0.04	0.09	0.12	0.26	0.26	0.03	0.33	0.33
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.284
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	0	0	1	0

Volume Module:

Base Vol:	1	333	118	27	168	3	2	1	0	63	0	114
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	1	340	120	28	171	3	2	1	0	64	0	116
Added Vol:	0	3	0	0	3	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	343	120	28	174	3	2	1	0	64	0	116
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	362	127	29	184	3	2	1	0	68	0	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	362	127	29	184	3	2	1	0	68	0	123
PCE 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
MLF 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
FinalVolume:	1	362	127	29	184	3	2	1	0	68	0	123

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.48	0.52	1.00	1.97	0.03	0.67	0.33	0.00	1.00	0.00	1.00
Final Sat.:	1700	2516	884	1700	3341	59	1133	567	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.14	0.14	0.02	0.06	0.06	0.00	0.00	0.00	0.04	0.00	0.07
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	0	5	0	0	0	5	2016	0	0	945	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	0	0	0	5	2168	0	0	1016	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2112	3195	509	2686	3196	1084	1018	0	0	2168	0	0
Stage 1	1017	1017	-	2178	2178	-	-	-	-	-	-	-
Stage 2	1095	2178	-	508	1018	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	29	10	509	10	10	212	677	-	-	243	-	-
Stage 1	254	313	-	47	84	-	-	-	-	-	-	-
Stage 2	228	84	-	516	313	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	29	10	509	10	10	212	677	-	-	243	-	-
Mov Cap-2 Maneuver	29	10	-	10	10	-	-	-	-	-	-	-
Stage 1	252	313	-	47	83	-	-	-	-	-	-	-
Stage 2	226	83	-	511	313	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	74.8	0	0	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	677	-	-	61	-	243	-
HCM Lane V/C Ratio	0.008	-	-	0.159	-	-	-
HCM Control Delay (s)	10.4	-	-	74.8	0	0	-
HCM Lane LOS	B	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0	-

Intersection												
Int Delay, s/veh	0.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	0	49	0	0	0	8	2001	0	0	917	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	53	0	0	0	9	2152	0	0	986	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2098	3174	512	2563	3194	1076	1025	0	0	2152	0	0
Stage 1	1005	1005	-	2169	2169	-	-	-	-	-	-	-
Stage 2	1093	2169	-	394	1025	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	40	10	434	19	10	215	381	-	-	247	-	-
Stage 1	202	317	-	47	85	-	-	-	-	-	-	-
Stage 2	223	85	-	570	311	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	40	10	434	17	10	215	381	-	-	247	-	-
Mov Cap-2 Maneuver	115	64	-	41	64	-	-	-	-	-	-	-
Stage 1	202	317	-	47	85	-	-	-	-	-	-	-
Stage 2	223	85	-	501	311	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	0	0.1	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	381	-	-	434	-	247	-
HCM Lane V/C Ratio	0.023	-	-	0.121	-	-	-
HCM Control Delay (s)	14.7	0	-	14.4	0	0	-
HCM Lane LOS	B	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	78	37	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	85	40	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	125	40	40	0	-
Stage 1	40	-	-	-	-
Stage 2	85	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	870	1031	1570	-	-
Stage 1	982	-	-	-	-
Stage 2	938	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	870	1031	1570	-	-
Mov Cap-2 Maneuver	870	-	-	-	-
Stage 1	982	-	-	-	-
Stage 2	938	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1570	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	21.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	22	4	2	51	44	1979	22	92	909	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	23	4	2	53	46	2061	23	96	947	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2287	3340	499	2735	3355	1042	998	0	0	2084	0	0
Stage 1	1164	1164	-	2165	2165	-	-	-	-	-	-	-
Stage 2	1123	2176	-	570	1190	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	30	8	442	14	8	226	392	-	-	262	-	-
Stage 1	156	267	-	48	85	-	-	-	-	-	-	-
Stage 2	214	84	-	445	259	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 9	4	442	9	4	226	392	-	-	262	-	-
Mov Cap-2 Maneuver	~ 9	4	-	9	4	-	-	-	-	-	-	-
Stage 1	138	169	-	42	75	-	-	-	-	-	-	-
Stage 2	140	74	-	267	164	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 1094.6	\$ 331.9	0.3	2.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	392	-	-	18	49	262	-	-
HCM Lane V/C Ratio	0.117	-	-	2.431	1.212	0.366	-	-
HCM Control Delay (s)	15.4	-	-	\$ 1094.6	\$ 331.9	26.5	-	-
HCM Lane LOS	C	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0.4	-	-	6	5.4	1.6	-	-

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

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.505
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	138	743	101	126	898	92	140	128	142	73	114	111
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	141	758	103	129	916	94	143	131	145	74	116	113
Added Vol:	5	19	4	0	26	2	2	1	5	4	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	146	777	107	129	942	96	145	132	150	78	117	113
User 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
PHF 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
PHF Volume:	147	781	108	129	947	96	146	132	151	79	118	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	147	781	108	129	947	96	146	132	151	79	118	114
PCE 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
MLF 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
FinalVolume:	147	781	108	129	947	96	146	132	151	79	118	114

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.64	0.36	2.00	2.72	0.28	1.00	1.00	1.00	1.00	1.02	0.98
Final Sat.:	1600	4482	618	3200	4629	471	1600	1700	1700	1600	1730	1670

Capacity Analysis Module:

Vol/Sat:	0.09	0.17	0.17	0.04	0.20	0.20	0.09	0.08	0.09	0.05	0.07	0.07
Crit Moves:	****			****			****			****		

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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.589
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:

Base Vol:	175	274	169	486	333	50	427	773	115	250	686	370
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	179	280	172	496	340	51	436	789	117	255	700	377
Added Vol:	14	13	6	2	17	16	14	24	16	9	32	2
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	193	293	178	498	357	67	450	813	133	264	732	379
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	197	300	183	511	366	69	461	833	137	271	751	389
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	300	183	511	366	69	461	833	137	271	751	389
PCE 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
MLF 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
FinalVolume:	197	300	183	511	366	69	461	833	137	271	751	389
OvlAdjVol:			18									77

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.53	0.47	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4293	807	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.06	0.09	0.09	0.16	0.09	0.09	0.14	0.16	0.08	0.08	0.15	0.20
OvlAdjV/S:			0.01									0.04
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.309
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	82	466	25	98	458	134	53	4	66	14	13	60
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	84	475	26	100	467	137	54	4	67	14	13	61
Added Vol:	0	33	0	0	42	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	508	26	100	509	137	54	4	67	14	13	61
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	88	534	27	105	535	144	57	4	71	15	14	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	534	27	105	535	144	57	4	71	15	14	64
PCE 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
MLF 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
FinalVolume:	88	534	27	105	535	144	57	4	71	15	14	64

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.37	0.63	0.93	0.07	1.00	0.52	0.48	1.00
Final Sat.:	1600	5100	1700	3200	4021	1079	1581	119	1700	881	819	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.05	0.10	0.02	0.03	0.13	0.13	0.03	0.04	0.04	0.01	0.02	0.04
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.535
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name: Sherry Ln - Cabrillo Park Ave						17th St										
Approach: North Bound			South Bound			East Bound			West Bound							
Movement:	L	T	R	L	T	R	L	T	R	L	T	R				
Control:	Permitted			Permitted			Protected			Protected						
Rights:	Include			Include			Include			Include						
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0				
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0				
Lanes:	1	0	1	0	1	0	1	0	2	1	0	1	0	2	1	0

Volume Module:

Base Vol:	159	54	90	114	70	66	55	926	83	106	921	78
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	162	55	92	116	71	67	56	945	85	108	940	80
Added Vol:	7	0	6	0	0	0	0	33	10	10	34	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	169	55	98	116	71	67	56	978	95	118	974	80
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	174	57	101	120	73	69	58	1006	97	122	1002	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	174	57	101	120	73	69	58	1006	97	122	1002	82
PCE 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
MLF 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
FinalVolume:	174	57	101	120	73	69	58	1006	97	122	1002	82

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.51	0.49	1.00	2.74	0.26	1.00	2.77	0.23
Final Sat.:	1600	1700	1700	1600	875	825	1600	4650	450	1600	4715	385

Capacity Analysis Module:

Vol/Sat:	0.11	0.03	0.06	0.07	0.08	0.08	0.04	0.22	0.22	0.08	0.21	0.21
Crit Moves:	****				****			****			****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B[12.4]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	14		0	0	44		0	1352	76	0	1292	54
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	14		0	0	45		0	1379	78	0	1318	55
Added Vol:	0	0	0		0	0	0		0	32	0	0	42	0
PasserByVol:	0	0	0		0	0	0		0	0	0	0	0	0
Initial Fut:	0	0	14		0	0	45		0	1411	78	0	1360	55
User 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
PHF Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	15		0	0	46		0	1437	79	0	1385	56
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0	0
FinalVolume:	0	0	15		0	0	46		0	1437	79	0	1385	56

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflict Vol:	xxxx	xxxx	399	xxxx	xxxx	xxxx	490	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	607	xxxx	xxxx	xxxx	530	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	607	xxxx	xxxx	xxxx	530	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.02	xxxx	xxxx	xxxx	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound			
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	11.1	xxxxx	xxxxx	xxxx	12.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	B	*	*	*	B	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	11.1				12.4				xxxxxxx			xxxxxxx			
ApproachLOS:	B				B				*			*			

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.635
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp			17th St								
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	29	28	12	43	837	447	437	1380	47
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	30	29	12	44	854	456	446	1408	48
Added Vol:	0	0	0	0	0	0	0	27	5	0	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	30	29	12	44	881	461	446	1450	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.00	0.81	0.81	0.81
PHF Volume:	0	0	0	36	35	15	54	1085	0	549	1785	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	36	35	15	54	1085	0	549	1785	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	36	35	15	54	1085	0	549	1785	59

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.70	0.30	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	0	0	0	1600	1190	510	1600	5100	1955	1600	4937	163

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.02	0.03	0.03	0.03	0.21	0.00	0.34	0.36	0.36
Crit Moves:				****			****			****		

Opening Year 2018 without Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

MD Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	881	461	446	1450	48	0	0	0	30	29	12
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	54	1088	0	551	1790	59				37	36	15
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81				0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	65	1687	604	606	3222	106				83	58	24
Arrive On Green	0.04	0.37	0.00	0.38	0.71	0.71				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4525	149				1587	1118	466
Grp Volume(v), veh/h	54	1088	0	551	1200	649				37	0	51
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1640				1587	0	1584
Q Serve(g_s), s	2.3	13.7	0.0	22.7	13.0	13.0				1.6	0.0	2.2
Cycle Q Clear(g_c), s	2.3	13.7	0.0	22.7	13.0	13.0				1.6	0.0	2.2
Prop In Lane	1.00		1.00	1.00		0.09				1.00		0.29
Lane Grp Cap(c), veh/h	65	1687	604	606	2160	1168				83	0	82
V/C Ratio(X)	0.84	0.64	0.00	0.91	0.56	0.56				0.45	0.00	0.62
Avail Cap(c_a), veh/h	184	1744	624	976	2676	1447				402	0	401
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	32.9	18.0	0.0	20.2	4.7	4.7				31.8	0.0	32.1
Incr Delay (d2), s/veh	23.3	0.8	0.0	7.9	0.2	0.4				3.8	0.0	7.3
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	1.4	5.8	0.0	11.3	5.4	5.9				0.8	0.0	1.1
LnGrp Delay(d),s/veh	56.2	18.8	0.0	28.1	5.0	5.2				35.6	0.0	39.4
LnGrp LOS	E	B		C	A	A				D		D
Approach Vol, veh/h		1142			2400						88	
Approach Delay, s/veh		20.6			10.3						37.8	
Approach LOS		C			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			30.9	30.1		8.1	7.3	53.7				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			42.5	26.5		17.5	8.0	61.0				
Max Q Clear Time (g_c+I1), s			24.7	15.7		4.2	4.3	15.0				
Green Ext Time (p_c), s			1.7	9.9		0.2	0.0	34.2				
Intersection Summary												
HCM 2010 Ctrl Delay			14.2									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	630		0	0	415		0	866	0		0	1449	0	
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	
Initial Bse:	0	0	643		0	0	423		0	883	0		0	1478	0	
Added Vol:	0	0	0		0	0	4		0	27	0		0	38	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	643		0	0	427		0	910	0		0	1516	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.94	0.94	0.00		0.94	0.94	0.00		0.94	0.94	0.94		0.94	0.94	0.94	
PHF Volume:	0	0	0		0	0	0		0	974	0		0	1622	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	974	0		0	1622	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	325	xxxx	xxxx	811	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	677	xxxx	xxxx	327	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	677	xxxx	xxxx	327	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			
ApproachLOS:	*			*			*			*			*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1139	357	0	1449	485
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	0	0	0	0	1162	364	0	1478	495
Added Vol:	0	0	0	0	0	0	0	24	3	0	38	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1186	367	0	1516	495
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.00	0.93	0.93	0.00
PHF Volume:	0	0	0	0	0	0	0	1271	0	0	1625	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1271	0	0	1625	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.594
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Mimi's Café - SR55 NB Ramps						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	427	34	395	1	0	111	68	1090	0	0	1360	28
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	436	35	403	1	0	113	69	1112	0	0	1387	29
Added Vol:	5	0	0	0	0	0	0	24	0	0	33	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	441	35	403	1	0	113	69	1136	0	0	1420	29
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	486	38	444	1	0	125	76	1252	0	0	1566	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	486	38	444	1	0	125	76	1252	0	0	1566	31
PCE 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
MLF 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
FinalVolume:	486	38	444	1	0	125	76	1252	0	0	1566	31

Saturation Flow Module:




















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.50	0.12	1.38	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2559	201	2340	15	0	1685	1700	5100	0	0	6666	134

Capacity Analysis Module:

Vol/Sat:	0.19	0.19	0.19	0.07	0.00	0.07	0.04	0.25	0.00	0.00	0.23	0.23
Crit Moves:	****			****			****			****		

Opening Year 2018 without Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

MD Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1136	0	0	1420	29	441	35	403	1	0	113
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.94	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1389	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1389	1346		1443	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	76	1248	0	0	1560	32	485	38	443	1	0	124
RTOR Reduction (vph)	0	0	0	0	3	0	0	26	219	0	114	0
Lane Group Flow (vph)	76	1248	0	0	1589	0	335	299	87	0	11	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	5.9	40.1			29.7		24.3	24.3	24.3		7.2	
Effective Green, g (s)	5.9	40.1			29.7		24.3	24.3	24.3		7.2	
Actuated g/C Ratio	0.07	0.47			0.35		0.29	0.29	0.29		0.08	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	109	2144			1994		429	396	384		122	
v/s Ratio Prot	0.05	c0.27			c0.28		c0.22	0.22			c0.01	
v/s Ratio Perm									0.06			
v/c Ratio	0.70	0.58			0.80		0.78	0.76	0.23		0.09	
Uniform Delay, d1	38.7	16.4			25.0		28.0	27.7	23.2		35.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	17.6	0.4			2.3		8.9	8.0	0.3		0.3	
Delay (s)	56.4	16.8			27.3		36.9	35.7	23.5		36.3	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		19.1			27.3			32.3			36.3	
Approach LOS		B			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			26.1				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			85.1				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			65.0%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.591
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	211	48	37	60	34	165	144	1121	222	43	1004	36
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	215	49	38	61	35	168	147	1144	226	44	1024	37
Added Vol:	3	0	0	0	0	0	0	21	3	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	218	49	38	61	35	168	147	1165	229	44	1054	37
User 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
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	244	55	42	68	39	188	164	1303	257	49	1179	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	244	55	42	68	39	188	164	1303	257	49	1179	41
PCE 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
MLF 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
FinalVolume:	244	55	42	68	39	188	164	1303	257	49	1179	41

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	3400	1700	1700	1700	290	1410	1700	5100	1700	1700	4928	172

Capacity Analysis Module:

Vol/Sat:	0.07	0.03	0.02	0.04	0.13	0.13	0.10	0.26	0.15	0.03	0.24	0.24
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.531
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:												
Base Vol:	70	35	22	66	49	161	184	1023	49	43	838	81
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	71	36	22	67	50	164	188	1044	50	44	855	83
Added Vol:	0	0	0	0	0	0	0	21	0	0	30	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	36	22	67	50	164	188	1065	50	44	885	83
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	78	39	25	74	55	180	206	1166	55	48	969	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	39	25	74	55	180	206	1166	55	48	969	91
PCE 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
MLF 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
FinalVolume:	78	39	25	74	55	180	206	1166	55	48	969	91

Saturation Flow Module:												
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.87	0.13	1.00	2.74	0.26
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4871	229	1700	4664	436

Capacity Analysis Module:												
Vol/Sat:	0.05	0.02	0.01	0.04	0.03	0.11	0.12	0.24	0.24	0.03	0.21	0.21
Crit Moves:	****					****	****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.190
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	0	0	1	0

Volume Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Base Vol:	0	153	26	17	240	4	2	0	0	42	1	72
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	156	27	17	245	4	2	0	0	43	1	73
Added Vol:	0	3	0	0	3	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	159	27	17	248	4	2	0	0	43	1	73
User 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
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	187	31	20	292	5	2	0	0	50	1	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	187	31	20	292	5	2	0	0	50	1	87
PCE 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
MLF 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
FinalVolume:	0	187	31	20	292	5	2	0	0	50	1	87

Saturation Flow Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.71	0.29	1.00	1.97	0.03	1.00	0.00	0.00	0.98	0.02	1.00
Final Sat.:	1700	2914	486	1700	3345	55	1700	0	0	1660	40	1700

Capacity Analysis Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Vol/Sat:	0.00	0.06	0.06	0.01	0.09	0.09	0.00	0.00	0.00	0.03	0.03	0.05
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	10	0	0	0	9	1012	0	0	843	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	10	0	0	0	9	1033	0	0	860	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1398	1914	433	1481	1916	516	865	0	0	1033	0	0
Stage 1	863	863	-	1051	1051	-	-	-	-	-	-	-
Stage 2	535	1051	-	430	865	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	100	67	571	87	67	504	774	-	-	668	-	-
Stage 1	316	370	-	243	302	-	-	-	-	-	-	-
Stage 2	497	302	-	574	369	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	99	66	571	85	66	504	774	-	-	668	-	-
Mov Cap-2 Maneuver	99	66	-	85	66	-	-	-	-	-	-	-
Stage 1	312	370	-	240	298	-	-	-	-	-	-	-
Stage 2	491	298	-	564	369	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	0	0.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	774	-	-	318	-	668	-
HCM Lane V/C Ratio	0.012	-	-	0.039	-	-	-
HCM Control Delay (s)	9.7	-	-	16.8	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	-	0	-

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	0	61	0	0	0	7	1010	0	0	847	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	62	0	0	0	7	1020	0	0	856	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1393	1903	441	1376	1916	510	882	0	0	1020	0	0
Stage 1	869	869	-	1034	1034	-	-	-	-	-	-	-
Stage 2	524	1034	-	342	882	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	123	68	482	126	67	509	446	-	-	676	-	-
Stage 1	251	367	-	243	308	-	-	-	-	-	-	-
Stage 2	489	308	-	612	362	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	120	66	482	107	65	509	446	-	-	676	-	-
Mov Cap-2 Maneuver	192	180	-	187	177	-	-	-	-	-	-	-
Stage 1	242	367	-	234	297	-	-	-	-	-	-	-
Stage 2	471	297	-	534	362	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.6	0	0.3	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	446	-	-	482	-	676	-
HCM Lane V/C Ratio	0.016	-	-	0.128	-	-	-
HCM Control Delay (s)	13.2	0.2	-	13.6	0	0	-
HCM Lane LOS	B	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	55	45	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	60	49	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	109	49	49	0	-
Stage 1	49	-	-	-	-
Stage 2	60	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	888	1020	1558	-	-
Stage 1	973	-	-	-	-
Stage 2	963	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	888	1020	1558	-	-
Mov Cap-2 Maneuver	888	-	-	-	-
Stage 1	973	-	-	-	-
Stage 2	963	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1558	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	8.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	28	2	45	20	2	56	51	1013	17	98	916	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	2	47	21	2	58	53	1055	18	102	954	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1809	2353	493	1757	2360	536	985	0	0	1073	0	0
Stage 1	1174	1174	-	1170	1170	-	-	-	-	-	-	-
Stage 2	635	1179	-	587	1190	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	64	35	446	70	35	489	398	-	-	645	-	-
Stage 1	154	264	-	200	265	-	-	-	-	-	-	-
Stage 2	420	262	-	434	259	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	42	26	446	47	26	489	398	-	-	645	-	-
Mov Cap-2 Maneuver	42	26	-	47	26	-	-	-	-	-	-	-
Stage 1	133	222	-	173	230	-	-	-	-	-	-	-
Stage 2	318	227	-	324	218	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	147.3	74.8	0.7	1.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	398	-	-	89	126	645	-	-
HCM Lane V/C Ratio	0.133	-	-	0.878	0.645	0.158	-	-
HCM Control Delay (s)	15.4	-	-	147.3	74.8	11.6	-	-
HCM Lane LOS	C	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.5	-	-	4.8	3.4	0.6	-	-

Appendix H – Opening Year 2018 With Project Conditions Intersection Analysis Worksheets

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.898
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	62	405	105	112	2600	93	100	288	187	112	202	109
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	63	413	107	114	2652	95	102	294	191	114	206	111
Added Vol:	23	28	11	0	20	1	2	1	13	11	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	86	441	118	114	2672	96	104	295	204	125	207	111
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	89	455	122	118	2758	99	107	304	210	129	214	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	89	455	122	118	2758	99	107	304	210	129	214	115
PCE 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
MLF 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
FinalVolume:	89	455	122	118	2758	99	107	304	210	129	214	115

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.37	0.63	2.00	2.90	0.10	1.00	1.18	0.82	1.00	1.30	0.70
Final Sat.:	1600	4023	1077	3200	4923	177	1600	2010	1390	1600	2212	1188

Capacity Analysis Module:

Vol/Sat:	0.06	0.11	0.11	0.04	0.56	0.56	0.07	0.15	0.15	0.08	0.10	0.10
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.786
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	105	189	209	549	1769	20	180	673	132	541	760	206
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	107	193	213	560	1805	20	184	687	135	552	775	210
Added Vol:	12	22	6	41	16	8	23	25	9	3	24	19
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	119	215	219	601	1821	28	207	712	144	555	799	229
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	123	222	226	621	1881	29	213	735	148	573	826	237
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	123	222	226	621	1881	29	213	735	148	573	826	237
PCE 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
MLF 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
FinalVolume:	123	222	226	621	1881	29	213	735	148	573	826	237
OvlAdjVol:	0									0		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	5022	78	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.07	0.12	0.19	0.37	0.37	0.07	0.14	0.09	0.18	0.16	0.12
OvlAdjV/S:	0.00									0.00		
Crit Moves:	****			****			****			****		

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
2018 With Project Traffic Conditions
With Opening Year 2018 Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.786
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: C

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows include Tustin Ave and 17th St with North, South, East, and West bounds.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume, OvlAdjVol.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns for Vol/Sat, OvlAdjV/S, Crit Moves.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.610
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	32	405	131	210	2151	75	25	16	79	26	6	39
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	33	413	134	214	2194	77	26	16	81	27	6	40
Added Vol:	0	39	0	0	28	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	33	452	134	214	2222	77	26	16	81	27	6	40
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	34	474	140	225	2329	80	27	17	84	28	6	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	34	474	140	225	2329	80	27	17	84	28	6	42
PCE 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
MLF 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
FinalVolume:	34	474	140	225	2329	80	27	17	84	28	6	42

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.90	0.10	0.61	0.39	1.00	0.81	0.19	1.00
Final Sat.:	1600	5100	1700	3200	4930	170	1037	663	1700	1381	319	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.02	0.09	0.08	0.07	0.47	0.47	0.02	0.03	0.05	0.02	0.02	0.02
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.548
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:		17th St														
Approach:		North Bound			South Bound			East Bound			West Bound					
Movement:		L	T	R	L	T	R	L	T	R	L	T	R			
Control:		Permitted			Permitted			Protected			Protected					
Rights:		Include			Include			Include			Include					
Min. Green:		0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:		1	0	1	0	1	1	0	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	119	39	85	78	94	29	11	769	221	165	838	30
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	121	40	87	80	96	30	11	784	225	168	855	31
Added Vol:	11	0	15	0	0	0	0	40	4	7	33	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	40	102	80	96	30	11	824	229	175	888	31
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	139	42	107	84	101	31	12	868	242	185	935	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	139	42	107	84	101	31	12	868	242	185	935	32
PCE 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
MLF 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
FinalVolume:	139	42	107	84	101	31	12	868	242	185	935	32

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.76	0.24	1.00	2.35	0.65	1.00	2.90	0.10
Final Sat.:	1600	1700	1700	1600	1299	401	1600	3990	1110	1600	4930	170

Capacity Analysis Module:

Vol/Sat:	0.09	0.02	0.06	0.05	0.08	0.08	0.01	0.22	0.22	0.12	0.19	0.19
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[13.5]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	107		0	0	22		0	1414	22	0	1495	33
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	109		0	0	22		0	1442	22	0	1525	34
Added Vol:	0	0	0		0	0	13		0	72	0	0	33	23
PasserByVol:	0	0	0		0	0	6		0	0	0	0	0	10
Initial Fut:	0	0	109		0	0	41		0	1514	22	0	1558	67
User 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
PHF Adj:	0.96	0.96	0.96		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	114		0	0	43		0	1582	23	0	1628	70
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0	0
FinalVolume:	0	0	114		0	0	43		0	1582	23	0	1628	70

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflict Vol:	xxxx	xxxx	407	xxxx	xxxx	xxxx	578	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	599	xxxx	xxxx	xxxx	464	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	599	xxxx	xxxx	xxxx	464	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.19	xxxx	xxxx	xxxx	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	0.7	xxxx	xxxx	xxxx	0.3	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.4	xxxxx	xxxxx	xxxx	13.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	*	B	*	*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	12.4				13.5				xxxxxxx			xxxxxxx		
ApproachLOS:	B				B				*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.637
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	42	224	22	18	932	582	322	1498	43
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	43	229	22	18	951	594	328	1528	44
Added Vol:	0	0	0	0	0	0	0	56	15	0	56	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	43	229	22	18	1007	609	328	1584	44
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.94
PHF Volume:	0	0	0	46	244	24	20	1073	0	350	1689	47
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	46	244	24	20	1073	0	350	1689	47
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	46	244	24	20	1073	0	350	1689	47

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.91	0.09	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	0	0	0	1600	1548	152	1600	5100	1955	1600	4963	137

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.03	0.16	0.16	0.01	0.21	0.00	0.22	0.34	0.34
Crit Moves:				****			****			****		

Opening Year 2018 with Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

AM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	1007	609	328	1584	44	0	0	0	43	229	22
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	19	1071	0	349	1685	47				46	244	23
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	28	1707	611	396	2762	77				316	298	28
Arrive On Green	0.02	0.38	0.00	0.25	0.61	0.61				0.20	0.20	0.20
Sat Flow, veh/h	1587	4550	1629	1587	4551	127				1587	1500	141
Grp Volume(v), veh/h	19	1071	0	349	1123	609				46	0	267
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1644				1587	0	1642
Q Serve(g_s), s	0.9	14.7	0.0	16.2	17.6	17.7				1.8	0.0	11.9
Cycle Q Clear(g_c), s	0.9	14.7	0.0	16.2	17.6	17.7				1.8	0.0	11.9
Prop In Lane	1.00		1.00	1.00		0.08				1.00		0.09
Lane Grp Cap(c), veh/h	28	1707	611	396	1841	998				316	0	327
V/C Ratio(X)	0.69	0.63	0.00	0.88	0.61	0.61				0.15	0.00	0.82
Avail Cap(c_a), veh/h	123	1707	611	675	2188	1186				530	0	548
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	19.5	0.0	27.6	9.4	9.4				25.2	0.0	29.3
Incr Delay (d2), s/veh	26.3	0.7	0.0	7.3	0.4	0.7				0.2	0.0	5.0
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	6.3	0.0	7.9	7.4	8.1				0.8	0.0	5.9
LnGrp Delay(d),s/veh	63.6	20.2	0.0	34.9	9.7	10.0				25.5	0.0	34.3
LnGrp LOS	E	C		C	A	B				C		C
Approach Vol, veh/h		1090			2081						313	
Approach Delay, s/veh		21.0			14.0						33.0	
Approach LOS		C			B						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			23.5	33.2		19.7	5.8	50.9				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			32.5	28.5		25.5	5.9	55.1				
Max Q Clear Time (g_c+I1), s			18.2	16.7		13.9	2.9	19.7				
Green Ext Time (p_c), s			0.9	10.5		1.3	0.0	26.7				
Intersection Summary												
HCM 2010 Ctrl Delay			17.9									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:

Base Vol:	0	0	666	0	0	395	0	974	0	0	1468	0
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	679	0	0	403	0	994	0	0	1498	0
Added Vol:	0	0	0	0	0	14	0	56	0	0	41	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	679	0	0	417	0	1050	0	0	1539	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.00	0.85	0.85	0.00	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	0	0	0	0	0	0	1233	0	0	1808	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1233	0	0	1808	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	411	xxxx	xxxx	904	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	595	xxxx	xxxx	284	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	595	xxxx	xxxx	284	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1331	309	0	1468	727
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	0	0	0	0	1358	315	0	1498	742
Added Vol:	0	0	0	0	0	0	0	43	14	0	41	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1401	329	0	1539	742
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.00
PHF Volume:	0	0	0	0	0	0	0	1495	0	0	1642	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1495	0	0	1642	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx	xxxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx		xxxxxxx	
ApproachLOS:	*		*		*		*		*		*	

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.527
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Mimi's Café - SR55 NB Ramps 17th St											
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	3	0	0	3

Volume Module:

Base Vol:	328	27	356	1	0	99	28	1299	0	0	1759	36
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	335	28	363	1	0	101	29	1325	0	0	1794	37
Added Vol:	15	0	0	0	0	0	0	43	0	0	26	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	350	28	363	1	0	101	29	1368	0	0	1820	37
User Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF 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
PHF Volume:	337	27	350	1	0	97	28	1319	0	0	1755	35
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	337	27	350	1	0	97	28	1319	0	0	1755	35
PCE 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
MLF 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
FinalVolume:	337	27	350	1	0	97	28	1319	0	0	1755	35

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.42	0.11	1.47	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2408	190	2502	17	0	1683	1700	5100	0	0	6666	134

Capacity Analysis Module:

Vol/Sat:	0.14	0.14	0.14	0.06	0.00	0.06	0.02	0.26	0.00	0.00	0.26	0.26
Crit Moves:			****	****			****			****		

Opening Year 2018 with Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

AM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	1368	0	0	1820	37	350	28	363	1	0	101
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.92	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1375	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1375	1346		1443	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	30	1425	0	0	1896	39	365	29	378	1	0	105
RTOR Reduction (vph)	0	0	0	0	2	0	0	37	187	0	99	0
Lane Group Flow (vph)	30	1425	0	0	1933	0	266	223	59	0	7	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	2.3	44.0			37.2		19.6	19.6	19.6		5.1	
Effective Green, g (s)	2.3	44.0			37.2		19.6	19.6	19.6		5.1	
Actuated g/C Ratio	0.03	0.54			0.45		0.24	0.24	0.24		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	44	2435			2586		358	327	320		89	
v/s Ratio Prot	0.02	c0.31			c0.34		c0.18	0.16			c0.00	
v/s Ratio Perm									0.04			
v/c Ratio	0.68	0.59			0.75		0.74	0.68	0.18		0.07	
Uniform Delay, d1	39.6	12.9			18.6		29.0	28.5	24.9		36.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	35.7	0.4			1.2		8.1	5.8	0.3		0.4	
Delay (s)	75.2	13.3			19.8		37.1	34.3	25.2		36.7	
Level of Service	E	B			B		D	C	C		D	
Approach Delay (s)		14.6			19.8			32.3			36.7	
Approach LOS		B			B			C			D	
Intersection Summary												
HCM 2000 Control Delay			20.7				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			82.2				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			64.6%				ICU Level of Service				C	
Analysis Period (min)			15									
c Critical Lane Group												

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.551
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	130	22	21	48	47	98	58	1328	270	93	1557	42
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	133	22	21	49	48	100	59	1355	275	95	1588	43
Added Vol:	7	0	0	0	0	0	0	36	6	0	20	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	140	22	21	49	48	100	59	1391	281	95	1608	43
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	144	23	22	50	49	103	61	1431	290	98	1655	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	144	23	22	50	49	103	61	1431	290	98	1655	44
PCE 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
MLF 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
FinalVolume:	144	23	22	50	49	103	61	1431	290	98	1655	44

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.32	0.68	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	3400	1700	1700	1700	551	1149	1700	5100	1700	1700	4968	132

Capacity Analysis Module:

Vol/Sat:	0.04	0.01	0.01	0.03	0.09	0.09	0.04	0.28	0.17	0.06	0.33	0.33
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.599
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	20	31	21	228	262	280	106	1300	35	46	1389	57
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	20	32	21	233	267	286	108	1326	36	47	1417	58
Added Vol:	0	0	0	0	0	0	0	36	0	0	20	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	20	32	21	233	267	286	108	1362	36	47	1437	58
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	21	32	22	238	274	292	111	1394	37	48	1471	60
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	21	32	22	238	274	292	111	1394	37	48	1471	60
PCE 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
MLF 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
FinalVolume:	21	32	22	238	274	292	111	1394	37	48	1471	60

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.88	0.12
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4970	130	1700	4902	198

Capacity Analysis Module:

Vol/Sat:	0.01	0.02	0.01	0.14	0.16	0.17	0.07	0.28	0.28	0.03	0.30	0.30
Crit Moves:	****					****	****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.363
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	0	1	0	1	0

Volume Module:

Base Vol:	0	101	44	14	357	2	0	1	0	255	0	50
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	103	45	14	364	2	0	1	0	260	0	51
Added Vol:	0	7	0	0	6	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	110	45	14	370	2	0	1	0	260	0	51
User 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
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	0	131	53	17	440	2	0	1	0	309	0	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	131	53	17	440	2	0	1	0	309	0	61
PCE 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
MLF 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
FinalVolume:	0	131	53	17	440	2	0	1	0	309	0	61

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.42	0.58	1.00	1.99	0.01	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1700	2415	985	1700	3381	19	0	1700	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.05	0.05	0.01	0.13	0.13	0.00	0.00	0.00	0.18	0.00	0.04
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	3.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	24	0	31	1	596	20	39	2422	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	26	0	33	1	634	21	41	2577	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2983	3321	1293	2018	3316	328	2586	0	0	655	0	0
Stage 1	2664	2664	-	647	647	-	-	-	-	-	-	-
Stage 2	319	657	-	1371	2669	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	6	8	154	34	8	668	166	-	-	928	-	-
Stage 1	23	47	-	426	465	-	-	-	-	-	-	-
Stage 2	667	460	-	154	46	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	5	8	154	29	8	668	166	-	-	928	-	-
Mov Cap-2 Maneuver	5	8	-	29	8	-	-	-	-	-	-	-
Stage 1	23	45	-	423	462	-	-	-	-	-	-	-
Stage 2	630	457	-	129	44	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.7	201.5	0	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	166	-	-	154	63	928	-	-
HCM Lane V/C Ratio	0.006	-	-	0.124	0.929	0.045	-	-
HCM Control Delay (s)	26.8	-	-	31.7	201.5	9.1	-	-
HCM Lane LOS	D	-	-	D	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	4.4	0.1	-	-

Opening Year 2018 with Project (with Mitigation)
 13: Tustin Ave & Annie's Salon/North Dwy

AM Peak
 HCM 2010 TWSC

Intersection													
Int Delay, s/veh	0.5												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	55	1	596	20	39	2439	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	59	1	634	21	41	2595	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2938	3339	1302	2027	3334	328	2604	0	0	655	0	0
Stage 1	2682	2682	-	647	647	-	-	-	-	-	-	-
Stage 2	256	657	-	1380	2687	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	10	8	151	45	8	570	163	-	-	572	-	-
Stage 1	22	46	-	358	465	-	-	-	-	-	-	-
Stage 2	690	460	-	149	45	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	8	7	151	37	7	570	163	-	-	572	-	-
Mov Cap-2 Maneuver	8	7	-	37	7	-	-	-	-	-	-	-
Stage 1	22	43	-	356	462	-	-	-	-	-	-	-
Stage 2	615	457	-	121	42	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.3	12	0	0.2
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	163	-	-	151	570	572	-
HCM Lane V/C Ratio	0.007	-	-	0.127	0.103	0.073	-
HCM Control Delay (s)	27.2	-	-	32.3	12	11.8	-
HCM Lane LOS	D	-	-	D	B	B	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.2	-

Intersection												
Int Delay, s/veh	0.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	34	0	0	50	1	573	39	0	2418	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	53	1	610	41	0	2572	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2896	3242	1303	1661	3238	326	2606	0	0	651	0	0
Stage 1	2589	2589	-	632	632	-	-	-	-	-	-	-
Stage 2	307	653	-	1029	2606	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	11	9	130	81	9	670	61	-	-	931	-	-
Stage 1	14	51	-	422	472	-	-	-	-	-	-	-
Stage 2	654	462	-	231	50	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	10	9	130	57	9	670	61	-	-	931	-	-
Mov Cap-2 Maneuver	13	43	-	128	42	-	-	-	-	-	-	-
Stage 1	14	51	-	411	460	-	-	-	-	-	-	-
Stage 2	586	450	-	167	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43	10.8	0.9	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	61	-	-	130	670	931	-
HCM Lane V/C Ratio	0.017	-	-	0.278	0.079	-	-
HCM Control Delay (s)	65.1	0.8	-	43	10.8	0	-
HCM Lane LOS	F	A	-	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.3	0	-

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	34	0	0	50	0	573	39	0	2418	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	53	0	610	41	0	2572	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2833	3240	1303	1659	3236	326	2606	0	0	651	0	0
Stage 1	2589	2589	-	630	630	-	-	-	-	-	-	-
Stage 2	244	651	-	1029	2606	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	19	9	130	103	9	572	61	-	-	575	-	-
Stage 1	14	51	-	358	473	-	-	-	-	-	-	-
Stage 2	677	463	-	226	50	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	17	9	130	74	9	572	61	-	-	575	-	-
Mov Cap-2 Maneuver	13	43	-	129	43	-	-	-	-	-	-	-
Stage 1	14	51	-	358	473	-	-	-	-	-	-	-
Stage 2	614	463	-	163	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43	11.9	0	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	61	-	-	130	572	575	-	-
HCM Lane V/C Ratio	-	-	-	0.278	0.093	-	-	-
HCM Control Delay (s)	0	-	-	43	11.9	0	-	-
HCM Lane LOS	A	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.3	0	-	-

Intersection

Int Delay, s/veh 3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	19	33	34	22	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	36	37	24	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	133	24	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	861	1052	1591	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	841	1052	1591	-	-	-
Mov Cap-2 Maneuver	841	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1591	-	1052	-	-
HCM Lane V/C Ratio	0.023	-	0.02	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	76.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	19	0	29	4	0	59	35	521	11	73	2711	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	30	4	0	60	36	532	11	74	2766	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3264	3541	1395	1865	3548	271	2790	0	0	543	0	0
Stage 1	2927	2927	-	609	609	-	-	-	-	-	-	-
Stage 2	337	614	-	1256	2939	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 6	6	112	59	6	727	49	-	-	1022	-	-
Stage 1	~ 8	34	-	436	484	-	-	-	-	-	-	-
Stage 2	628	481	-	166	33	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 2	1	112	17	1	727	49	-	-	1022	-	-
Mov Cap-2 Maneuver	~ 2	1	-	17	1	-	-	-	-	-	-	-
Stage 1	~ 2	32	-	116	128	-	-	-	-	-	-	-
Stage 2	153	128	-	113	31	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 5366.9	31.5	11.4	0.2
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	49	-	-	5 199	1022	-	-
HCM Lane V/C Ratio	0.729	-	-	9.796 0.323	0.073	-	-
HCM Control Delay (s)	184.3	-	-	\$ 5366.9 31.5	8.8	-	-
HCM Lane LOS	F	-	-	F D	A	-	-
HCM 95th %tile Q(veh)	2.9	-	-	7.8 1.3	0.2	-	-

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

Intersection												
Int Delay, s/veh	3.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	48	0	0	63	44	530	11	73	2720	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	49	0	0	64	45	541	11	74	2776	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3296	3578	1399	1895	3584	276	2799	0	0	552	0	0
Stage 1	2936	2936	-	636	636	-	-	-	-	-	-	-
Stage 2	360	642	-	1259	2948	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.1	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.7	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	6	5	171	56	5	721	48	-	-	1014	-	-
Stage 1	8	33	-	420	470	-	-	-	-	-	-	-
Stage 2	609	467	-	165	33	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1	0	171	7	0	721	48	-	-	1014	-	-
Mov Cap-2 Maneuver	1	0	-	7	0	-	-	-	-	-	-	-
Stage 1	1	31	-	26	29	-	-	-	-	-	-	-
Stage 2	35	29	-	109	31	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.3	10.5	18.3	0.2
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	48	-	-	171	721	1014	-	-
HCM Lane V/C Ratio	0.935	-	-	0.286	0.089	0.073	-	-
HCM Control Delay (s)	243.7	-	-	34.3	10.5	8.8	-	-
HCM Lane LOS	F	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	3.9	-	-	1.1	0.3	0.2	-	-

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.673
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:

Base Vol:	189	1571	129	175	898	94	142	175	128	74	222	141
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	193	1603	132	179	916	96	145	179	131	75	226	144
Added Vol:	33	28	14	0	34	2	1	1	16	15	2	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	226	1631	146	179	950	98	146	180	147	90	228	144
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	233	1681	150	184	979	101	150	185	151	93	236	148
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	233	1681	150	184	979	101	150	185	151	93	236	148
PCE 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
MLF 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
FinalVolume:	233	1681	150	184	979	101	150	185	151	93	236	148

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.75	0.25	2.00	2.72	0.28	1.00	1.10	0.90	1.00	1.23	0.77
Final Sat.:	1600	4682	418	3200	4624	476	1600	1872	1528	1600	2086	1314

Capacity Analysis Module:

Vol/Sat:	0.15	0.36	0.36	0.06	0.21	0.21	0.09	0.10	0.10	0.06	0.11	0.11
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.983
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:

Base Vol:	315	1188	564	451	444	41	419	917	126	231	973	375
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	321	1212	575	460	453	42	427	935	129	236	993	383
Added Vol:	13	23	6	50	26	14	30	23	14	7	47	26
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	334	1235	581	510	479	56	457	958	143	243	1040	409
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	359	1325	624	547	514	60	491	1028	153	260	1115	438
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	359	1325	624	547	514	60	491	1028	153	260	1115	438
PCE 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
MLF 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
FinalVolume:	359	1325	624	547	514	60	491	1028	153	260	1115	438
OvlAdjVol:	465									104		

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.69	0.31	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4568	532	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.11	0.39	0.32	0.17	0.11	0.11	0.15	0.20	0.09	0.08	0.22	0.22
OvlAdjV/S:	0.24								0.05			
Crit Moves:	****			****				****	****			

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
2018 With Project Traffic Conditions
With Opening Year 2018 Mitigatoin

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.853
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: D

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module: Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, OvlAdjVol.

Saturation Flow Module: Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns: Vol/Sat, OvlAdjV/S, Crit Moves.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.597
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	93	1509	73	98	531	105	64	3	65	51	14	217
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	95	1539	74	100	542	107	65	3	66	52	14	221
Added Vol:	0	42	0	0	46	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	95	1581	74	100	588	107	65	3	66	52	14	221
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	102	1697	80	107	631	115	70	3	71	56	15	238
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	102	1697	80	107	631	115	70	3	71	56	15	238
PCE 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
MLF 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
FinalVolume:	102	1697	80	107	631	115	70	3	71	56	15	238

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.54	0.46	0.96	0.04	1.00	0.78	0.22	1.00
Final Sat.:	1600	5100	1700	3200	4314	786	1624	76	1700	1334	366	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.33	0.05	0.03	0.15	0.15	0.04	0.04	0.04	0.03	0.04	0.14
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.645
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:		17th St														
Approach:		North Bound			South Bound			East Bound			West Bound					
Movement:		L	T	R	L	T	R	L	T	R	L	T	R			
Control:		Permitted			Permitted			Protected			Protected					
Rights:		Include			Include			Include			Include					
Min. Green:		0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:		1	0	1	0	1	1	0	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	285	125	147	126	60	48	42	960	97	127	1195	63
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	291	128	150	129	61	49	43	979	99	130	1219	64
Added Vol:	8	0	12	0	0	0	0	42	12	16	46	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	299	128	162	129	61	49	43	1021	111	146	1265	64
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	315	135	171	136	65	52	45	1077	117	154	1334	68
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	315	135	171	136	65	52	45	1077	117	154	1334	68
PCE 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
MLF 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
FinalVolume:	315	135	171	136	65	52	45	1077	117	154	1334	68

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.56	0.44	1.00	2.71	0.29	1.00	2.85	0.15
Final Sat.:	1600	1700	1700	1600	944	756	1600	4600	500	1600	4853	247

Capacity Analysis Module:

Vol/Sat:	0.20	0.08	0.10	0.08	0.07	0.07	0.03	0.23	0.23	0.10	0.27	0.27
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C [15.3]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	11	0	0	36	0	1747	213	0	1557	76
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	11	0	0	37	0	1782	217	0	1588	78
Added Vol:	0	0	0	0	0	16	0	79	0	0	64	29
PasserByVol:	0	0	0	0	0	7	0	0	0	0	0	13
Initial Fut:	0	0	11	0	0	60	0	1861	217	0	1652	120
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	12	0	0	64	0	1997	233	0	1773	128
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	12	0	0	64	0	1997	233	0	1773	128

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	616	xxxx	xxxx	655	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	439	xxxx	xxxx	413	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	439	xxxx	xxxx	413	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.03	xxxx	xxxx	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.5	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	13.4	xxxxx	xxxx	15.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	C	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	13.4			15.3			xxxxxxx			xxxxxxx		
ApproachLOS:	B			C			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.604
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	13	39	11	43	1164	514	400	1519	63
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	13	40	11	44	1187	524	408	1550	64
Added Vol:	0	0	0	0	0	0	0	59	20	0	93	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	13	40	11	44	1246	544	408	1643	64
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96
PHF Volume:	0	0	0	14	42	12	46	1304	0	427	1718	67
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	14	42	12	46	1304	0	427	1718	67
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	14	42	12	46	1304	0	427	1718	67

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.78	0.22	1.00	3.00	1.00	1.00	2.89	0.11
Final Sat.:	0	0	0	1600	1326	374	1600	5100	1955	1600	4908	192

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.03	0.03	0.03	0.26	0.00	0.27	0.35	0.35
Crit Moves:				****			****			****		

Opening Year 2018 with Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

PM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	1246	544	408	1643	64	0	0	0	13	40	11
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	46	1298	0	425	1711	67				14	42	11
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	54	2085	747	478	3260	128				74	59	15
Arrive On Green	0.03	0.46	0.00	0.30	0.73	0.73				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4493	176				1587	1274	334
Grp Volume(v), veh/h	46	1298	0	425	1155	623				14	0	53
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1636				1587	0	1608
Q Serve(g_s), s	2.0	15.0	0.0	17.8	11.7	11.8				0.6	0.0	2.3
Cycle Q Clear(g_c), s	2.0	15.0	0.0	17.8	11.7	11.8				0.6	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.11				1.00		0.21
Lane Grp Cap(c), veh/h	54	2085	747	478	2201	1187				74	0	74
V/C Ratio(X)	0.85	0.62	0.00	0.89	0.52	0.53				0.19	0.00	0.71
Avail Cap(c_a), veh/h	171	2125	761	833	2681	1446				399	0	404
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	33.4	14.3	0.0	23.2	4.2	4.2				31.9	0.0	32.7
Incr Delay (d2), s/veh	28.8	0.6	0.0	6.2	0.2	0.4				1.2	0.0	11.8
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	1.3	6.4	0.0	8.6	4.9	5.3				0.3	0.0	1.2
LnGrp Delay(d),s/veh	62.2	14.8	0.0	29.4	4.4	4.6				33.2	0.0	44.5
LnGrp LOS	E	B		C	A	A				C		D
Approach Vol, veh/h		1344			2203							67
Approach Delay, s/veh		16.5			9.3							42.1
Approach LOS		B			A							D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			25.5	36.4		7.7	6.9	55.0				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			36.5	32.5		17.5	7.5	61.5				
Max Q Clear Time (g_c+I1), s			19.8	17.0		4.3	4.0	13.8				
Green Ext Time (p_c), s			1.2	14.0		0.2	0.0	36.7				
Intersection Summary												
HCM 2010 Ctrl Delay			12.6									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	767		0	0	435		0	1177	0		0	1547	0	
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	
Initial Bse:	0	0	782		0	0	444		0	1201	0		0	1578	0	
Added Vol:	0	0	0		0	0	20		0	59	0		0	73	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	782		0	0	464		0	1260	0		0	1651	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.93	0.93	0.00		0.93	0.93	0.00		0.93	0.93	0.93		0.93	0.93	0.93	
PHF Volume:	0	0	0		0	0	0		0	1356	0		0	1777	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1356	0		0	1777	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	452		xxxx	xxxx	889		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	560		xxxx	xxxx	290		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	560		xxxx	xxxx	290		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00		xxxx	xxxx	0.00		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	*		*	*	*	
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx	
Shrd ConDel:	xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx		xxxxxx	xxxx	xxxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxxx				xxxxxxx				xxxxxxx				xxxxxxx			
ApproachLOS:	*				*				*				*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound				South Bound				East Bound			West Bound		
Movement:	L	T	R		L	T	R		L	T	R	L	T	R
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled		
Rights:	Include				Include				Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	0	0	1458	486	0	1547	826
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	0	0	0	0	0	0	1487	496	0	1578	843
Added Vol:	0	0	0	0	0	0	0	0	0	40	19	0	73	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	0	0	1527	515	0	1651	843
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.00	0.95	0.95	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	1604	0	0	1734	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	1604	0	0	1734	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.894
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name: Mimi's Café - SR55 NB Ramps 17th St
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	3	0	0	3

Volume Module:

Base Vol:	404	24	199	2	0	98	64	1387	0	0	1906	35
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	412	24	203	2	0	100	65	1415	0	0	1944	36
Added Vol:	22	0	0	0	0	0	0	40	0	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	434	24	203	2	0	100	65	1455	0	0	1995	36
User 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
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	460	26	215	2	0	106	69	1541	0	0	2114	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	460	26	215	2	0	106	69	1541	0	0	2114	38
PCE 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
MLF 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
FinalVolume:	460	26	215	2	0	106	69	1541	0	0	2114	38

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.97	1.15	1.00	1.00	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.97	0.03	1.00	0.02	0.00	0.98	1.00	3.00	0.00	0.00	3.93	0.07
Final Sat.:	3242	62	1700	34	0	1666	1600	5100	0	0	6680	120

Capacity Analysis Module:

Vol/Sat:	0.14	0.42	0.13	0.06	0.00	0.06	0.04	0.30	0.00	0.00	0.32	0.32
Crit Moves:	****			****			****			****		

Opening Year 2018 with Project
 9: SR-55 SB Ramps/Mimi's Cafe & 17th St

PM Peak
 HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	1455	0	0	1995	36	434	24	203	2	0	100
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.99	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (prot)	1583	4550			5718		1504	1439	1346		1444	
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (perm)	1583	4550			5718		1504	1439	1346		1444	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	69	1548	0	0	2122	38	462	26	216	2	0	106
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	145	0	101	0
Lane Group Flow (vph)	69	1548	0	0	2158	0	254	253	49	0	7	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	4.8	49.1			39.8		18.6	18.6	18.6		5.3	
Effective Green, g (s)	4.8	49.1			39.8		18.6	18.6	18.6		5.3	
Actuated g/C Ratio	0.06	0.57			0.46		0.22	0.22	0.22		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	87	2582			2630		323	309	289		88	
v/s Ratio Prot	0.04	c0.34			c0.38		0.17	c0.18			c0.00	
v/s Ratio Perm									0.04			
v/c Ratio	0.79	0.60			0.82		0.79	0.82	0.17		0.08	
Uniform Delay, d1	40.4	12.3			20.3		32.1	32.3	27.7		38.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	37.6	0.4			2.2		11.9	15.4	0.3		0.4	
Delay (s)	78.0	12.6			22.4		44.0	47.7	27.9		38.7	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		15.4			22.4			40.9			38.7	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			23.2				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			86.5			Sum of lost time (s)		18.0				
Intersection Capacity Utilization			71.4%			ICU Level of Service		C				
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.691
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	323	83	92	102	26	133	127	1276	182	44	1500	31
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	329	85	94	104	27	136	130	1302	186	45	1530	32
Added Vol:	8	0	0	0	0	0	0	32	8	0	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	337	85	94	104	27	136	130	1334	194	45	1572	32
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	363	91	101	112	28	146	139	1432	208	48	1689	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	363	91	101	112	28	146	139	1432	208	48	1689	34
PCE 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
MLF 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
FinalVolume:	363	91	101	112	28	146	139	1432	208	48	1689	34

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.16	0.84	1.00	3.00	1.00	1.00	2.94	0.06
Final Sat.:	3200	1700	1700	1600	278	1422	1600	5100	1700	1600	4999	101

Capacity Analysis Module:

Vol/Sat:	0.11	0.05	0.06	0.07	0.10	0.10	0.09	0.28	0.12	0.03	0.34	0.34
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.663
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:	Yorba St - Enderle Center Dr			Yorba St - Enderle Center Dr			17th St			17th St		
Base Vol:	80	163	30	81	72	140	192	1190	46	56	1380	205
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	82	166	31	83	73	143	196	1214	47	57	1408	209
Added Vol:	0	0	0	0	0	0	0	32	0	0	42	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	82	166	31	83	73	143	196	1246	47	57	1450	209
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	84	171	31	85	75	147	201	1279	48	59	1488	215
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	171	31	85	75	147	201	1279	48	59	1488	215
PCE 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
MLF 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
FinalVolume:	84	171	31	85	75	147	201	1279	48	59	1488	215

Saturation Flow Module:	Yorba St - Enderle Center Dr			Yorba St - Enderle Center Dr			17th St			17th St		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.89	0.11	1.00	2.62	0.38
Final Sat.:	1600	1700	1700	1600	1700	1700	1600	4915	185	1600	4457	643

Capacity Analysis Module:	Yorba St - Enderle Center Dr			Yorba St - Enderle Center Dr			17th St			17th St		
Vol/Sat:	0.05	0.10	0.02	0.05	0.04	0.09	0.13	0.26	0.26	0.04	0.33	0.33
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.287
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	0	0	1	0

Volume Module:

Base Vol:	1	333	118	27	168	3	2	1	0	63	0	114
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	1	340	120	28	171	3	2	1	0	64	0	116
Added Vol:	0	8	0	0	8	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	348	120	28	179	3	2	1	0	64	0	116
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	1	367	127	29	189	3	2	1	0	68	0	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	367	127	29	189	3	2	1	0	68	0	123
PCE 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
MLF 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
FinalVolume:	1	367	127	29	189	3	2	1	0	68	0	123

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.49	0.51	1.00	1.97	0.03	0.67	0.33	0.00	1.00	0.00	1.00
Final Sat.:	1600	2526	874	1600	3343	57	1133	567	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.15	0.15	0.02	0.06	0.06	0.00	0.00	0.00	0.04	0.00	0.07
Crit Moves:	****			****			****			****		

Opening Year 2018 with Project
13: Tustin Ave & Annie's Salon/North Dwy

PM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	60.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	0	5	31	0	39	5	2059	26	50	983	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	33	0	42	5	2214	28	54	1057	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2284	3419	530	2875	3406	1121	1059	0	0	2242	0	0
Stage 1	1166	1166	-	2239	2239	-	-	-	-	-	-	-
Stage 2	1118	2253	-	636	1167	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	21	7	493	~ 7	7	200	653	-	-	227	-	-
Stage 1	206	266	-	43	78	-	-	-	-	-	-	-
Stage 2	221	76	-	433	266	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	13	5	493	~ 6	5	200	653	-	-	227	-	-
Mov Cap-2 Maneuver	13	5	-	~ 6	5	-	-	-	-	-	-	-
Stage 1	204	203	-	43	77	-	-	-	-	-	-	-
Stage 2	173	75	-	326	203	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	190.5	\$ 2731.9	0	1.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	653	-	-	28	13	227	-	-
HCM Lane V/C Ratio	0.008	-	-	0.346	5.79	0.237	-	-
HCM Control Delay (s)	10.6	-	-	190.5	\$ 2731.9	25.7	-	-
HCM Lane LOS	B	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0	-	-	1.1	10.5	0.9	-	-

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

Opening Year 2018 with Project (with Mitigation)
 13: Tustin Ave & Annie's Salon/North Dwy

PM Peak
 HCM 2010 TWSC

Intersection												
Int Delay, s/veh	2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	9	0	0	70	5	2059	26	50	1004	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	10	0	0	75	5	2214	28	54	1080	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2084	3441	541	2886	3428	1121	1082	0	0	2242	0	0
Stage 1	1188	1188	-	2239	2239	-	-	-	-	-	-	-
Stage 2	896	2253	-	647	1189	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	6.5	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	41	7	485	11	7	210	640	-	-	94	-	-
Stage 1	195	260	-	26	78	-	-	-	-	-	-	-
Stage 2	280	76	-	414	260	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	14	3	485	6	3	210	640	-	-	94	-	-
Mov Cap-2 Maneuver	14	3	-	6	3	-	-	-	-	-	-	-
Stage 1	193	111	-	26	77	-	-	-	-	-	-	-
Stage 2	178	75	-	173	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	31.4	0	4
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	640	-	-	485	210	94	-	-
HCM Lane V/C Ratio	0.008	-	-	0.02	0.358	0.572	-	-
HCM Control Delay (s)	10.7	-	-	12.6	31.4	85.3	-	-
HCM Lane LOS	B	-	-	B	D	F	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.5	2.6	-	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	0	49	0	0	61	8	2018	50	0	976	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	53	0	0	66	9	2170	54	0	1049	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2171	3310	544	2634	3302	1112	1088	0	0	2224	0	0
Stage 1	1069	1069	-	2214	2214	-	-	-	-	-	-	-
Stage 2	1102	2241	-	420	1088	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	36	8	414	17	8	203	355	-	-	231	-	-
Stage 1	182	296	-	44	80	-	-	-	-	-	-	-
Stage 2	221	78	-	549	290	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	24	8	414	15	8	203	355	-	-	231	-	-
Mov Cap-2 Maneuver	86	59	-	39	59	-	-	-	-	-	-	-
Stage 1	182	296	-	44	80	-	-	-	-	-	-	-
Stage 2	150	78	-	479	290	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	31	0.1	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	355	-	-	414	203	231	-	-
HCM Lane V/C Ratio	0.024	-	-	0.127	0.323	-	-	-
HCM Control Delay (s)	15.4	0	-	15	31	0	-	-
HCM Lane LOS	C	A	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1.3	0	-	-

Opening Year 2018 with Project (with Mitigation)
 14: Tustin Ave & 7-Eleven/South Dwy

PM Peak
 HCM 2010 TWSC

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	67	0	0	61	0	2018	50	0	976	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	72	0	0	66	0	2170	54	0	1049	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1937	3293	544	2617	3285	1112	1088	0	0	2224	0	0
Stage 1	1069	1069	-	2197	2197	-	-	-	-	-	-	-
Stage 2	868	2224	-	420	1088	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	6.9	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	69	9	414	26	9	188	355	-	-	96	-	-
Stage 1	178	296	-	28	82	-	-	-	-	-	-	-
Stage 2	284	79	-	532	290	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	45	9	414	21	9	188	355	-	-	96	-	-
Mov Cap-2 Maneuver	103	60	-	25	61	-	-	-	-	-	-	-
Stage 1	178	296	-	28	82	-	-	-	-	-	-	-
Stage 2	185	79	-	439	290	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	34.1	0	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	355	-	-	414	188	96	-	-
HCM Lane V/C Ratio	-	-	-	0.174	0.349	-	-	-
HCM Control Delay (s)	0	-	-	15.5	34.1	0	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	1.5	0	-	-

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	23	42	78	37	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	46	85	40	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	216	40	40
Stage 1	40	-	-
Stage 2	176	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	772	1031	1570
Stage 1	982	-	-
Stage 2	855	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	748	1031	1570
Mov Cap-2 Maneuver	748	-	-
Stage 1	982	-	-
Stage 2	828	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1570	-	1031	-	-
HCM Lane V/C Ratio	0.029	-	0.024	-	-
HCM Control Delay (s)	7.4	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	38.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	22	4	2	51	66	2027	22	92	961	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	0	23	4	2	53	69	2111	23	96	1001	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2412	3490	526	2852	3504	1067	1052	0	0	2134	0	0
Stage 1	1218	1218	-	2260	2260	-	-	-	-	-	-	-
Stage 2	1194	2272	-	592	1244	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	24	6	425	12	6	218	369	-	-	251	-	-
Stage 1	143	251	-	41	76	-	-	-	-	-	-	-
Stage 2	194	75	-	431	244	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 5	3	425	7	3	218	369	-	-	251	-	-
Mov Cap-2 Maneuver	~ 5	3	-	7	3	-	-	-	-	-	-	-
Stage 1	116	155	-	33	62	-	-	-	-	-	-	-
Stage 2	115	61	-	252	151	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 2258.1	\$ 492.4	0.5	2.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	369	-	-	10	39	251	-	-
HCM Lane V/C Ratio	0.186	-	-	4.375	1.522	0.382	-	-
HCM Control Delay (s)	17	-	-	\$ 2258.1	\$ 492.4	27.9	-	-
HCM Lane LOS	C	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0.7	-	-	6.7	6.2	1.7	-	-

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

Intersection												
Int Delay, s/veh	1.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	43	0	0	57	76	2038	22	92	971	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	45	0	0	59	79	2123	23	96	1011	51

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2449	3533	531	2889	3547	1073	1063	0	0	2146	0	0
Stage 1	1229	1229	-	2293	2293	-	-	-	-	-	-	-
Stage 2	1220	2304	-	596	1254	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	23	6	422	11	6	216	365	-	-	248	-	-
Stage 1	140	248	-	39	73	-	-	-	-	-	-	-
Stage 2	187	72	-	429	242	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	10	3	422	6	3	216	365	-	-	248	-	-
Mov Cap-2 Maneuver	10	3	-	6	3	-	-	-	-	-	-	-
Stage 1	110	152	-	31	57	-	-	-	-	-	-	-
Stage 2	106	56	-	235	148	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	27.9	0.6	2.3
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	365	-	-	422	216	248	-	-
HCM Lane V/C Ratio	0.217	-	-	0.106	0.275	0.386	-	-
HCM Control Delay (s)	17.6	-	-	14.5	27.9	28.4	-	-
HCM Lane LOS	C	-	-	B	D	D	-	-
HCM 95th %tile Q(veh)	0.8	-	-	0.4	1.1	1.7	-	-

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.541
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	138	743	101	126	898	92	140	128	142	73	114	111
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	141	758	103	129	916	94	143	131	145	74	116	113
Added Vol:	55	39	24	0	46	2	2	1	26	25	1	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	196	797	127	129	962	96	145	132	171	99	117	113
User 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
PHF 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
PHF Volume:	197	801	128	129	967	96	146	132	172	100	118	114
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	801	128	129	967	96	146	132	172	100	118	114
PCE 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
MLF 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
FinalVolume:	197	801	128	129	967	96	146	132	172	100	118	114

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.59	0.41	2.00	2.73	0.27	1.00	1.00	1.00	1.00	1.02	0.98
Final Sat.:	1600	4399	701	3200	4638	462	1600	1700	1700	1600	1730	1670

Capacity Analysis Module:

Vol/Sat:	0.12	0.18	0.18	0.04	0.21	0.21	0.09	0.08	0.10	0.06	0.07	0.07
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.639
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:

Base Vol:	175	274	169	486	333	50	427	773	115	250	686	370
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	179	280	172	496	340	51	436	789	117	255	700	377
Added Vol:	14	33	6	91	37	16	45	24	16	9	61	43
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	193	313	178	587	377	67	481	813	133	264	761	420
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	197	321	183	602	386	69	493	833	137	271	780	431
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	197	321	183	602	386	69	493	833	137	271	780	431
PCE 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
MLF 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
FinalVolume:	197	321	183	602	386	69	493	833	137	271	780	431
OvlAdjVol:			18									64

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.55	0.45	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4330	770	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.06	0.09	0.09	0.19	0.09	0.09	0.15	0.16	0.08	0.08	0.15	0.22
OvlAdjV/S:			0.01									0.03
Crit Moves:	****			****			****			****		

Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
2018 With Project Traffic Conditions
With Opening Year 2018 Mitigatoin

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.608
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: B

Table with columns: Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, Lanes. Rows for North Bound, South Bound, East Bound, West Bound.

Volume Module: Table with columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, FinalVolume, OvlAdjVol.

Saturation Flow Module: Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat.

Capacity Analysis Module: Table with columns: Vol/Sat, OvlAdjV/S, Crit Moves.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.313
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:

Base Vol:	82	466	25	98	458	134	53	4	66	14	13	60
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	84	475	26	100	467	137	54	4	67	14	13	61
Added Vol:	0	54	0	0	62	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	84	529	26	100	529	137	54	4	67	14	13	61
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	88	556	27	105	556	144	57	4	71	15	14	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	88	556	27	105	556	144	57	4	71	15	14	64
PCE 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
MLF 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
FinalVolume:	88	556	27	105	556	144	57	4	71	15	14	64

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.38	0.62	0.93	0.07	1.00	0.52	0.48	1.00
Final Sat.:	1600	5100	1700	3200	4053	1047	1581	119	1700	881	819	1700

Capacity Analysis Module:

Vol/Sat:	0.05	0.11	0.02	0.03	0.14	0.14	0.03	0.04	0.04	0.01	0.02	0.04
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.546
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name: Sherry Ln - Cabrillo Park Ave						17th St							
Approach: North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	2	1	0	1	0

Volume Module:

Base Vol:	159	54	90	114	70	66	55	926	83	106	921	78
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	162	55	92	116	71	67	56	945	85	108	940	80
Added Vol:	7	0	17	0	0	0	0	54	10	20	54	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	169	55	109	116	71	67	56	999	95	128	994	80
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	174	57	112	120	73	69	58	1027	97	132	1022	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	174	57	112	120	73	69	58	1027	97	132	1022	82
PCE 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
MLF 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
FinalVolume:	174	57	112	120	73	69	58	1027	97	132	1022	82

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.51	0.49	1.00	2.74	0.26	1.00	2.78	0.22
Final Sat.:	1600	1700	1700	1600	875	825	1600	4658	442	1600	4722	378

Capacity Analysis Module:

Vol/Sat:	0.11	0.03	0.07	0.07	0.08	0.08	0.04	0.22	0.22	0.08	0.22	0.22
Crit Moves:	****				****			****		****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[14.0]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	14		0	0	44		0	1352	76		0	1292	54	
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	
Initial Bse:	0	0	14		0	0	45		0	1379	78		0	1318	55	
Added Vol:	0	0	0		0	0	30		0	121	0		0	83	52	
PasserByVol:	0	0	0		0	0	13		0	0	0		0	0	22	
Initial Fut:	0	0	14		0	0	88		0	1500	78		0	1401	129	
User 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	
PHF Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	
PHF Volume:	0	0	15		0	0	89		0	1528	79		0	1427	131	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	15		0	0	89		0	1528	79		0	1427	131	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	421	xxxx	xxxx	541	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	586	xxxx	xxxx	490	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	586	xxxx	xxxx	490	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.02	xxxx	xxxx	0.18	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	11.3	xxxxx	xxxx	14.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	11.3				14.0				xxxxxxx				xxxxxxx			
ApproachLOS:	B				B				*				*			

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.650
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	29	28	12	43	837	447	437	1380	47
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	30	29	12	44	854	456	446	1408	48
Added Vol:	0	0	0	0	0	0	0	87	35	0	135	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	30	29	12	44	941	491	446	1543	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.00	0.81	0.81	0.81
PHF Volume:	0	0	0	36	35	15	54	1159	0	549	1900	59
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	36	35	15	54	1159	0	549	1900	59
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	36	35	15	54	1159	0	549	1900	59

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.70	0.30	1.00	3.00	1.00	1.00	2.91	0.09
Final Sat.:	0	0	0	1600	1190	510	1600	5100	1955	1600	4946	154

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.02	0.03	0.03	0.03	0.23	0.00	0.34	0.38	0.38
Crit Moves:				****			****			****		

Opening Year 2018 with Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

MD Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	44	941	491	446	1543	48	0	0	0	30	29	12
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	54	1162	0	551	1905	59				37	36	15
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81				0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	65	1727	618	604	3261	101				82	58	24
Arrive On Green	0.04	0.38	0.00	0.38	0.72	0.72				0.05	0.05	0.05
Sat Flow, veh/h	1587	4550	1629	1587	4535	140				1587	1118	466
Grp Volume(v), veh/h	54	1162	0	551	1273	691				37	0	51
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1642				1587	0	1584
Q Serve(g_s), s	2.4	15.3	0.0	23.6	14.6	14.6				1.6	0.0	2.3
Cycle Q Clear(g_c), s	2.4	15.3	0.0	23.6	14.6	14.6				1.6	0.0	2.3
Prop In Lane	1.00		1.00	1.00		0.09				1.00		0.29
Lane Grp Cap(c), veh/h	65	1727	618	604	2181	1181				82	0	82
V/C Ratio(X)	0.83	0.67	0.00	0.91	0.58	0.58				0.45	0.00	0.62
Avail Cap(c_a), veh/h	177	1727	618	941	2580	1396				387	0	387
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	18.5	0.0	21.1	4.9	4.9				33.0	0.0	33.3
Incr Delay (d2), s/veh	22.9	1.0	0.0	8.9	0.2	0.5				3.8	0.0	7.5
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	1.5	6.5	0.0	11.7	6.1	6.7				0.8	0.0	1.2
LnGrp Delay(d),s/veh	57.1	19.6	0.0	30.0	5.1	5.3				36.8	0.0	40.8
LnGrp LOS	E	B		C	A	A				D		D
Approach Vol, veh/h		1216			2515						88	
Approach Delay, s/veh		21.2			10.6						39.1	
Approach LOS		C			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			31.8	31.7		8.2	7.4	56.1				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			42.5	26.5		17.5	8.0	61.0				
Max Q Clear Time (g_c+I1), s			25.6	17.3		4.3	4.4	16.6				
Green Ext Time (p_c), s			1.7	8.7		0.2	0.0	35.0				
Intersection Summary												
HCM 2010 Ctrl Delay			14.7									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	630		0	0	415		0	866	0		0	1449	0	
Growth Adj:	1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02		1.02	1.02	1.02	
Initial Bse:	0	0	643		0	0	423		0	883	0		0	1478	0	
Added Vol:	0	0	0		0	0	35		0	87	0		0	101	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	643		0	0	458		0	970	0		0	1579	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.94	0.94	0.00		0.94	0.94	0.00		0.94	0.94	0.94		0.94	0.94	0.94	
PHF Volume:	0	0	0		0	0	0		0	1038	0		0	1689	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1038	0		0	1689	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	346	xxxx	xxxx	844	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	656	xxxx	xxxx	311	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	656	xxxx	xxxx	311	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			
ApproachLOS:	*			*			*			*			*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1139	357	0	1449	485
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	0	0	0	0	0	0	1162	364	0	1478	495
Added Vol:	0	0	0	0	0	0	0	54	33	0	101	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1216	397	0	1579	495
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.00	0.93	0.93	0.00
PHF Volume:	0	0	0	0	0	0	0	1303	0	0	1693	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1303	0	0	1693	0

Critical Gap Module:	North Bound			South Bound			East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound			South Bound			East Bound			West Bound		
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound			South Bound			East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.606
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	427	34	395	1	0	111	68	1090	0	0	1360	28
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	436	35	403	1	0	113	69	1112	0	0	1387	29
Added Vol:	36	0	0	0	0	0	0	54	0	0	64	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	472	35	403	1	0	113	69	1166	0	0	1451	29
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	520	38	444	1	0	125	76	1285	0	0	1600	31
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	520	38	444	1	0	125	76	1285	0	0	1600	31
PCE 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
MLF 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
FinalVolume:	520	38	444	1	0	125	76	1285	0	0	1600	31

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.56	0.11	1.33	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2645	195	2260	15	0	1685	1700	5100	0	0	6669	131

Capacity Analysis Module:

Vol/Sat:	0.20	0.20	0.20	0.07	0.00	0.07	0.04	0.25	0.00	0.00	0.24	0.24
Crit Moves:	****			****			****			****		

Opening Year 2018 with Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

MD Peak
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	69	1166	0	0	1451	29	472	35	403	1	0	113
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.94	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1395	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1395	1346		1443	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	76	1281	0	0	1595	32	519	38	443	1	0	124
RTOR Reduction (vph)	0	0	0	0	3	0	0	21	224	0	114	0
Lane Group Flow (vph)	76	1281	0	0	1624	0	348	316	91	0	11	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	5.9	40.4			30.0		25.0	25.0	25.0		7.2	
Effective Green, g (s)	5.9	40.4			30.0		25.0	25.0	25.0		7.2	
Actuated g/C Ratio	0.07	0.47			0.35		0.29	0.29	0.29		0.08	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	108	2134			1991		436	405	390		120	
v/s Ratio Prot	0.05	c0.28			c0.28		c0.23	0.23			c0.01	
v/s Ratio Perm									0.07			
v/c Ratio	0.70	0.60			0.82		0.80	0.78	0.23		0.09	
Uniform Delay, d1	39.2	16.9			25.5		28.2	28.0	23.3		36.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	18.7	0.5			2.7		9.8	9.2	0.3		0.3	
Delay (s)	58.0	17.4			28.2		38.0	37.2	23.6		36.8	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		19.6			28.2			33.2			36.8	
Approach LOS		B			C			C			D	
Intersection Summary												
HCM 2000 Control Delay			26.9				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.73									
Actuated Cycle Length (s)			86.1				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			66.4%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.599
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	211	48	37	60	34	165	144	1121	222	43	1004	36
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	215	49	38	61	35	168	147	1144	226	44	1024	37
Added Vol:	13	0	0	0	0	0	0	41	13	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	228	49	38	61	35	168	147	1185	239	44	1075	37
User 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
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	255	55	42	68	39	188	164	1325	268	49	1203	41
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	255	55	42	68	39	188	164	1325	268	49	1203	41
PCE 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
MLF 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
FinalVolume:	255	55	42	68	39	188	164	1325	268	49	1203	41

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	3400	1700	1700	1700	290	1410	1700	5100	1700	1700	4932	168

Capacity Analysis Module:

Vol/Sat:	0.08	0.03	0.02	0.04	0.13	0.13	0.10	0.26	0.16	0.03	0.24	0.24
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.535
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	70	35	22	66	49	161	184	1023	49	43	838	81
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	71	36	22	67	50	164	188	1044	50	44	855	83
Added Vol:	0	0	0	0	0	0	0	41	0	0	51	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	71	36	22	67	50	164	188	1085	50	44	906	83
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	78	39	25	74	55	180	206	1188	55	48	992	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	78	39	25	74	55	180	206	1188	55	48	992	91
PCE 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
MLF 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
FinalVolume:	78	39	25	74	55	180	206	1188	55	48	992	91

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.87	0.13	1.00	2.75	0.25
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4875	225	1700	4674	426

Capacity Analysis Module:

Vol/Sat:	0.05	0.02	0.01	0.04	0.03	0.11	0.12	0.24	0.24	0.03	0.21	0.21
Crit Moves:	****					****	****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2018 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.193
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	0	0	1	0

Volume Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Base Vol:	0	153	26	17	240	4	2	0	0	42	1	72
Growth Adj:	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
Initial Bse:	0	156	27	17	245	4	2	0	0	43	1	73
Added Vol:	0	13	0	0	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	169	27	17	258	4	2	0	0	43	1	73
User 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
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	199	31	20	304	5	2	0	0	50	1	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	199	31	20	304	5	2	0	0	50	1	87
PCE 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
MLF 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
FinalVolume:	0	199	31	20	304	5	2	0	0	50	1	87

Saturation Flow Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.73	0.27	1.00	1.97	0.03	1.00	0.00	0.00	0.98	0.02	1.00
Final Sat.:	1700	2939	461	1700	3347	53	1700	0	0	1660	40	1700

Capacity Analysis Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Vol/Sat:	0.00	0.07	0.07	0.01	0.09	0.09	0.00	0.00	0.00	0.03	0.03	0.05
Crit Moves:	****			****			****			****		

Opening Year 2018 with Project
13: Tustin Ave & Annie's Salon/North Dwy

MD Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	21.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	10	57	0	71	9	1091	44	89	912	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	10	58	0	72	9	1113	45	91	931	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1690	2292	468	1801	2271	579	936	0	0	1158	0	0
Stage 1	1115	1115	-	1154	1154	-	-	-	-	-	-	-
Stage 2	575	1177	-	647	1117	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	61	39	542	~ 50	40	458	727	-	-	599	-	-
Stage 1	222	282	-	210	270	-	-	-	-	-	-	-
Stage 2	470	263	-	426	281	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	45	33	542	~ 43	34	458	727	-	-	599	-	-
Mov Cap-2 Maneuver	45	33	-	~ 43	34	-	-	-	-	-	-	-
Stage 1	219	239	-	207	267	-	-	-	-	-	-	-
Stage 2	391	260	-	354	238	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.1	\$ 369.1	0.1	1.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	727	-	-	191	86	599	-	-
HCM Lane V/C Ratio	0.013	-	-	0.064	1.519	0.152	-	-
HCM Control Delay (s)	10	-	-	25.1	\$ 369.1	12.1	-	-
HCM Lane LOS	B	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	10.3	0.5	-	-

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

Opening Year 2018 with Project (with Mitigation)
 13: Tustin Ave & Annie's Salon/North Dwy

MD Peak
 HCM 2010 TWSC

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	12	0	0	128	9	1091	44	89	952	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	0	0	131	9	1113	45	91	971	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1620	2333	488	1821	2312	579	977	0	0	1158	0	0
Stage 1	1156	1156	-	1154	1154	-	-	-	-	-	-	-
Stage 2	464	1177	-	667	1158	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	86	36	526	63	38	393	702	-	-	328	-	-
Stage 1	204	269	-	159	270	-	-	-	-	-	-	-
Stage 2	516	263	-	402	269	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	45	26	526	48	27	393	702	-	-	328	-	-
Mov Cap-2 Maneuver	45	26	-	48	27	-	-	-	-	-	-	-
Stage 1	201	194	-	157	267	-	-	-	-	-	-	-
Stage 2	340	260	-	284	194	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	18.7	0.1	1.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	702	-	-	526	393	328	-	-
HCM Lane V/C Ratio	0.013	-	-	0.023	0.332	0.277	-	-
HCM Control Delay (s)	10.2	-	-	12	18.7	20.1	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.4	1.1	-	-

Intersection												
Int Delay, s/veh	1.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	0	61	0	0	114	7	1041	89	0	956	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	62	0	0	115	7	1052	90	0	966	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1519	2135	496	1497	2103	571	992	0	0	1141	0	0
Stage 1	979	979	-	1111	1111	-	-	-	-	-	-	-
Stage 2	540	1156	-	386	992	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	101	49	444	105	51	464	395	-	-	608	-	-
Stage 1	211	326	-	218	283	-	-	-	-	-	-	-
Stage 2	478	269	-	576	322	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	73	47	444	87	48	464	395	-	-	608	-	-
Mov Cap-2 Maneuver	145	152	-	164	154	-	-	-	-	-	-	-
Stage 1	200	326	-	207	269	-	-	-	-	-	-	-
Stage 2	341	256	-	496	322	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	15.3	0.5	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	395	-	-	444	464	608	-	-
HCM Lane V/C Ratio	0.018	-	-	0.139	0.248	-	-	-
HCM Control Delay (s)	14.3	0.4	-	14.4	15.3	0	-	-
HCM Lane LOS	B	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1	0	-	-

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	74	0	0	114	0	1041	89	0	956	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	75	0	0	115	0	1052	90	0	966	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1400	2120	496	1482	2088	571	992	0	0	1141	0	0
Stage 1	979	979	-	1096	1096	-	-	-	-	-	-	-
Stage 2	421	1141	-	386	992	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	148	50	444	132	52	397	395	-	-	334	-	-
Stage 1	206	326	-	171	287	-	-	-	-	-	-	-
Stage 2	531	274	-	558	322	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	105	50	444	110	52	397	395	-	-	334	-	-
Mov Cap-2 Maneuver	163	159	-	148	162	-	-	-	-	-	-	-
Stage 1	206	326	-	171	287	-	-	-	-	-	-	-
Stage 2	377	274	-	464	322	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	17.7	0	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	395	-	-	444	397	334	-	-
HCM Lane V/C Ratio	-	-	-	0.168	0.29	-	-	-
HCM Control Delay (s)	0	-	-	14.7	17.7	0	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	1.2	0	-	-

Intersection

Int Delay, s/veh 4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	43	74	55	45	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	80	60	49	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	270	49	49 0
Stage 1	49	-	- -
Stage 2	221	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	719	1020	1558 -
Stage 1	973	-	- -
Stage 2	816	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	681	1020	1558 -
Mov Cap-2 Maneuver	681	-	- -
Stage 1	973	-	- -
Stage 2	773	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.7	4.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1558	-	1020	-	-
HCM Lane V/C Ratio	0.052	-	0.046	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection												
Int Delay, s/veh	20.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	28	2	45	20	2	56	91	1103	17	98	1007	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	2	47	21	2	58	95	1149	18	102	1049	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2034	2625	540	1972	2631	583	1080	0	0	1167	0	0
Stage 1	1269	1269	-	1347	1347	-	-	-	-	-	-	-
Stage 2	765	1356	-	625	1284	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	45	24	416	49	23	456	358	-	-	594	-	-
Stage 1	132	238	-	156	218	-	-	-	-	-	-	-
Stage 2	352	216	-	412	234	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 24	15	416	27	14	456	358	-	-	594	-	-
Mov Cap-2 Maneuver	~ 24	15	-	27	14	-	-	-	-	-	-	-
Stage 1	97	197	-	115	160	-	-	-	-	-	-	-
Stage 2	223	159	-	300	194	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 417.1	207.9	1.4	1.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	358	-	-	53 78	594	-	-
HCM Lane V/C Ratio	0.265	-	-	1.474 1.042	0.172	-	-
HCM Control Delay (s)	18.6	-	-	\$ 417.1 207.9	12.3	-	-
HCM Lane LOS	C	-	-	F F	B	-	-
HCM 95th %tile Q(veh)	1	-	-	7.2 5.7	0.6	-	-

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

Intersection												
Int Delay, s/veh	2.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	74	0	0	79	111	1122	17	98	1027	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	77	0	0	82	116	1169	18	102	1070	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2106	2708	551	2041	2714	593	1101	0	0	1186	0	0
Stage 1	1290	1290	-	1409	1409	-	-	-	-	-	-	-
Stage 2	816	1418	-	632	1305	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	40	21	409	44	21	449	350	-	-	585	-	-
Stage 1	127	232	-	143	203	-	-	-	-	-	-	-
Stage 2	328	201	-	408	228	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	21	12	409	23	12	449	350	-	-	585	-	-
Mov Cap-2 Maneuver	21	12	-	23	12	-	-	-	-	-	-	-
Stage 1	85	192	-	96	136	-	-	-	-	-	-	-
Stage 2	179	134	-	273	188	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.8	14.8	1.8	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	350	-	-	409	449	585	-	-
HCM Lane V/C Ratio	0.33	-	-	0.188	0.183	0.175	-	-
HCM Control Delay (s)	20.3	-	-	15.8	14.8	12.5	-	-
HCM Lane LOS	C	-	-	C	B	B	-	-
HCM 95th %tile Q(veh)	1.4	-	-	0.7	0.7	0.6	-	-

Appendix I – Buildout 2035 Without Project Conditions Intersection Analysis Worksheets

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.951
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						Santa Clara Ave					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Base Vol:	70	470	120	120	2860	100	110	320	230	140	220	120
Growth 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
Initial Bse:	70	470	120	120	2860	100	110	320	230	140	220	120
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	72	485	124	124	2951	103	114	330	237	144	227	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	72	485	124	124	2951	103	114	330	237	144	227	124
PCE 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
MLF 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
FinalVolume:	72	485	124	124	2951	103	114	330	237	144	227	124

Saturation Flow Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.39	0.61	2.00	2.90	0.10	1.00	1.16	0.84	1.00	1.29	0.71
Final Sat.:	1600	4063	1037	3200	4928	172	1600	1978	1422	1600	2200	1200

Capacity Analysis Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Vol/Sat:	0.05	0.12	0.12	0.04	0.60	0.60	0.07	0.17	0.17	0.09	0.10	0.10
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.837
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	120	210	260	600	1950	30	200	760	150	600	960	250
Growth 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
Initial Bse:	120	210	260	600	1950	30	200	760	150	600	960	250
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	124	217	269	620	2014	31	207	785	155	620	992	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	124	217	269	620	2014	31	207	785	155	620	992	258
PCE 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
MLF 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
FinalVolume:	124	217	269	620	2014	31	207	785	155	620	992	258
OvlAdjVol:	0									0		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	5023	77	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.06	0.14	0.19	0.40	0.40	0.06	0.15	0.09	0.19	0.19	0.13
OvlAdjV/S:	0.00									0.00		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.654
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Tustin Centre					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	40	480	140	230	2370	80	30	20	90	30	10	40
Growth 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
Initial Bse:	40	480	140	230	2370	80	30	20	90	30	10	40
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	42	503	147	241	2484	84	31	21	94	31	10	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	503	147	241	2484	84	31	21	94	31	10	42
PCE 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
MLF 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
FinalVolume:	42	503	147	241	2484	84	31	21	94	31	10	42

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.90	0.10	0.60	0.40	1.00	0.75	0.25	1.00
Final Sat.:	1600	5100	1700	3200	4933	167	1020	680	1700	1275	425	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.03	0.10	0.09	0.08	0.50	0.50	0.02	0.03	0.06	0.02	0.02	0.02
Crit Moves:	****			****			****		****	****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.563
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:		Sherry Ln - Cabrillo Park Ave 17th St											
Approach:	North Bound			South Bound			East Bound			West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2	

Volume Module:

Base Vol:	135	40	100	100	100	30	15	850	240	180	1030	35
Growth 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
Initial Bse:	135	40	100	100	100	30	15	850	240	180	1030	35
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	142	42	105	105	105	32	16	895	253	189	1084	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	42	105	105	105	32	16	895	253	189	1084	37
PCE 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
MLF 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
FinalVolume:	142	42	105	105	105	32	16	895	253	189	1084	37

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.77	0.23	1.00	2.34	0.66	1.00	2.90	0.10
Final Sat.:	1600	1700	1700	1600	1308	392	1600	3977	1123	1600	4932	168

Capacity Analysis Module:

Vol/Sat:	0.09	0.02	0.06	0.07	0.08	0.08	0.01	0.22	0.22	0.12	0.22	0.22
Crit Moves:	****				****			****			****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[14.2]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	120		0	0	25		0	1600	25	0	1800	40
Growth 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
Initial Bse:	0	0	120		0	0	25		0	1600	25	0	1800	40
User 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
PHF Adj:	0.96	0.96	0.96		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96
PHF Volume:	0	0	125		0	0	26		0	1672	26	0	1881	42
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0	0
Final Volume:	0	0	125		0	0	26		0	1672	26	0	1881	42

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflct Vol:	xxxx	xxxx	431		xxxx	xxxx	648		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	578		xxxx	xxxx	418		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	578		xxxx	xxxx	418		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.22		xxxx	xxxx	0.06		xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	0.8		xxxx	xxxx	0.2		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	12.9		xxxxx	xxxx	14.2		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B		*	*	B		*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shared Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*		*	*	*		*	*	*	*	*	*
ApproachDel:	12.9				14.2				xxxxxx			xxxxxx		
ApproachLOS:	B				B				*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.733
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name: Deodar St - SR55 SB On-Ramp 17th St
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

	North Bound			South Bound			East Bound			West Bound		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	50	250	25	20	1070	640	430	1820	50
Growth 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
Initial Bse:	0	0	0	50	250	25	20	1070	640	430	1820	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.94
PHF Volume:	0	0	0	53	267	27	21	1141	0	458	1940	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	53	267	27	21	1141	0	458	1940	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	53	267	27	21	1141	0	458	1940	53

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.91	0.09	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	0	0	0	1600	1545	155	1600	5100	1955	1600	4964	136

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.03	0.17	0.17	0.01	0.22	0.00	0.29	0.39	0.39
Crit Moves:				****			****			****		

Buildout 2035 without Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

AM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	1070	640	430	1820	50	0	0	0	50	250	25
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	21	1138	0	457	1936	53				53	266	27
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	29	1475	528	494	2809	77				332	312	32
Arrive On Green	0.02	0.32	0.00	0.31	0.62	0.62				0.21	0.21	0.21
Sat Flow, veh/h	1587	4550	1629	1587	4554	125				1587	1489	151
Grp Volume(v), veh/h	21	1138	0	457	1289	700				53	0	293
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1645				1587	0	1640
Q Serve(g_s), s	1.1	19.6	0.0	24.2	24.6	24.7				2.4	0.0	14.9
Cycle Q Clear(g_c), s	1.1	19.6	0.0	24.2	24.6	24.7				2.4	0.0	14.9
Prop In Lane	1.00		1.00	1.00		0.08				1.00		0.09
Lane Grp Cap(c), veh/h	29	1475	528	494	1871	1015				332	0	343
V/C Ratio(X)	0.72	0.77	0.00	0.93	0.69	0.69				0.16	0.00	0.85
Avail Cap(c_a), veh/h	108	1493	534	594	1924	1043				466	0	481
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	26.5	0.0	28.9	11.1	11.1				28.1	0.0	33.1
Incr Delay (d2), s/veh	28.4	2.5	0.0	18.6	1.0	1.9				0.2	0.0	10.2
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	0.7	8.6	0.0	13.1	10.5	11.6				1.1	0.0	7.7
LnGrp Delay(d),s/veh	70.8	29.0	0.0	47.5	12.1	13.0				28.3	0.0	43.3
LnGrp LOS	E	C		D	B	B				C		D
Approach Vol, veh/h		1159			2446						346	
Approach Delay, s/veh		29.7			19.0						41.0	
Approach LOS		C			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			31.5	32.7		22.7	6.1	58.1				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			32.5	28.5		25.5	5.9	55.1				
Max Q Clear Time (g_c+I1), s			26.2	21.6		16.9	3.1	26.7				
Green Ext Time (p_c), s			0.8	6.6		1.3	0.0	24.4				
Intersection Summary												
HCM 2010 Ctrl Delay			24.1									
HCM 2010 LOS			C									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	780		0	0	620		0	1120	0		0	1680	0	
Growth 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	
Initial Bse:	0	0	780		0	0	620		0	1120	0		0	1680	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.85	0.85	0.00		0.85	0.85	0.00		0.85	0.85	0.85		0.85	0.85	0.85	
PHF Volume:	0	0	0		0	0	0		0	1316	0		0	1974	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1316	0		0	1974	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflct Vol:	xxxx	xxxx	439		xxxx	xxxx	987		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	572		xxxx	xxxx	250		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	572		xxxx	xxxx	250		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00		xxxx	xxxx	0.00		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	*		*	*	*	
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach: North Bound South Bound East Bound West Bound

Movement: L - T - R L - T - R L - T - R L - T - R

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Control: Stop Sign Stop Sign Uncontrolled Uncontrolled

Rights: Include Include Ignore Ignore

Lanes: 0 0 0 0 0 0 0 0 0 0 1 0 0 3 0 1

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Volume Module:

Base Vol: 0 0 0 0 0 0 0 0 1500 400 0 1680 810

Growth 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 1.00

Initial Bse: 0 0 0 0 0 0 0 0 1500 400 0 1680 810

User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00

PHF Adj: 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.00 0.94 0.94 0.00

PHF Volume: 0 0 0 0 0 0 0 0 1601 0 0 1793 0

Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0

FinalVolume: 0 0 0 0 0 0 0 0 1601 0 0 1793 0

-----|-----|-----|-----|

Critical Gap Module:

Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

-----|-----|-----|-----|

Capacity Module:

Cnflct Vol: xxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxx xxxxx xxxxx xxxx xxxxx

Potent Cap.: xxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxx xxxxx xxxxx xxxx xxxxx

Move Cap.: xxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxx xxxxx xxxxx xxxx xxxxx

Volume/Cap: xxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxx xxxxx xxxxx xxxx xxxxx

-----|-----|-----|-----|

Level Of Service Module:

2Way95thQ: xxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxx xxxxx xxxxx xxxx xxxxx

Control Del:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxxx xxxx xxxxx xxxxx

LOS by Move: *

Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT

Shared Cap.: xxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxx xxxxx xxxxx xxxx xxxxx

SharedQueue:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxxx xxxx xxxx xxxxx

Shrd ConDel:xxxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxxx xxxxx xxxx xxxxx

Shared LOS: *

ApproachDel: xxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx

ApproachLOS: *

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.572
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Mimi's Café - SR55 NB Ramps						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	410	30	390	1	0	110	30	1470	0	0	1970	40
Growth 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
Initial Bse:	410	30	390	1	0	110	30	1470	0	0	1970	40
User Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF 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
PHF Volume:	395	29	376	1	0	106	29	1417	0	0	1899	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	395	29	376	1	0	106	29	1417	0	0	1899	39
PCE 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
MLF 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
FinalVolume:	395	29	376	1	0	106	29	1417	0	0	1899	39

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.48	0.11	1.41	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2519	184	2396	15	0	1685	1700	5100	0	0	6665	135

Capacity Analysis Module:

Vol/Sat:	0.16	0.16	0.16	0.06	0.00	0.06	0.02	0.28	0.00	0.00	0.28	0.28
Crit Moves:	****			****			****			****		

Buildout 2035 without Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

AM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1470	0	0	1970	40	410	30	390	1	0	110
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.93	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1382	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1382	1346		1443	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	31	1531	0	0	2052	42	427	31	406	1	0	115
RTOR Reduction (vph)	0	0	0	0	2	0	0	29	205	0	108	0
Lane Group Flow (vph)	31	1531	0	0	2092	0	299	264	67	0	8	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	2.5	46.5			39.5		21.4	21.4	21.4		5.6	
Effective Green, g (s)	2.5	46.5			39.5		21.4	21.4	21.4		5.6	
Actuated g/C Ratio	0.03	0.53			0.45		0.25	0.25	0.25		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	45	2431			2595		369	339	331		92	
v/s Ratio Prot	0.02	c0.34			c0.37		c0.20	0.19			c0.01	
v/s Ratio Perm									0.05			
v/c Ratio	0.69	0.63			0.81		0.81	0.78	0.20		0.09	
Uniform Delay, d1	41.9	14.2			20.5		30.9	30.6	26.0		38.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	35.8	0.5			1.9		12.6	10.7	0.3		0.4	
Delay (s)	77.7	14.7			22.4		43.5	41.3	26.3		38.7	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		16.0			22.4			37.3			38.7	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			23.4				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			87.0			Sum of lost time (s)		18.0				
Intersection Capacity Utilization			68.7%			ICU Level of Service		C				
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.597
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	140	25	25	50	60	110	60	1440	360	140	1760	50
Growth 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
Initial Bse:	140	25	25	50	60	110	60	1440	360	140	1760	50
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	144	26	26	51	62	113	62	1481	370	144	1811	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	144	26	26	51	62	113	62	1481	370	144	1811	51
PCE 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
MLF 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
FinalVolume:	144	26	26	51	62	113	62	1481	370	144	1811	51

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.35	0.65	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	3400	1700	1700	1700	600	1100	1700	5100	1700	1700	4959	141

Capacity Analysis Module:

Vol/Sat:	0.04	0.02	0.02	0.03	0.10	0.10	0.04	0.29	0.22	0.08	0.37	0.37
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.695
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	25	35	25	300	290	390	120	1400	40	50	1530	80
Growth 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
Initial Bse:	25	35	25	300	290	390	120	1400	40	50	1530	80
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	26	36	26	307	297	399	123	1433	41	51	1566	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	36	26	307	297	399	123	1433	41	51	1566	82
PCE 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
MLF 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
FinalVolume:	26	36	26	307	297	399	123	1433	41	51	1566	82

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.85	0.15
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4958	142	1700	4847	253

Capacity Analysis Module:

Vol/Sat:	0.02	0.02	0.02	0.18	0.17	0.23	0.07	0.29	0.29	0.03	0.32	0.32
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.426
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	0	1	0	1	0

Volume Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Base Vol:	0	110	50	20	500	5	0	5	0	280	0	60
Growth 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
Initial Bse:	0	110	50	20	500	5	0	5	0	280	0	60
User 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
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	0	131	59	24	595	6	0	6	0	333	0	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	131	59	24	595	6	0	6	0	333	0	71
PCE 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
MLF 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
FinalVolume:	0	131	59	24	595	6	0	6	0	333	0	71

Saturation Flow Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.38	0.62	1.00	1.98	0.02	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1700	2338	1062	1700	3366	34	0	1700	0	1700	0	1700

Capacity Analysis Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Vol/Sat:	0.00	0.06	0.06	0.01	0.18	0.18	0.00	0.00	0.00	0.20	0.00	0.04
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	20	0	0	0	2	590	0	0	2560	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	21	0	0	0	2	628	0	0	2723	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3047	3361	1367	1994	3366	314	2734	0	0	628	0	0
Stage 1	2729	2729	-	632	632	-	-	-	-	-	-	-
Stage 2	318	632	-	1362	2734	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	5	8	137	36	8	682	145	-	-	950	-	-
Stage 1	21	43	-	435	472	-	-	-	-	-	-	-
Stage 2	668	472	-	156	43	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	5	8	137	30	8	682	145	-	-	950	-	-
Mov Cap-2 Maneuver	5	8	-	30	8	-	-	-	-	-	-	-
Stage 1	21	43	-	429	465	-	-	-	-	-	-	-
Stage 2	659	465	-	132	43	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	36	0	0.1	0
HCM LOS	E	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	145	-	-	137	-	950	-
HCM Lane V/C Ratio	0.015	-	-	0.155	-	-	-
HCM Control Delay (s)	30.2	-	-	36	0	0	-
HCM Lane LOS	D	-	-	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	-	0	-

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	40	0	0	0	2	590	0	0	2540	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	0	2	628	0	0	2702	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3039	3353	1370	1713	3371	314	2739	0	0	628	0	0
Stage 1	2721	2721	-	632	632	-	-	-	-	-	-	-
Stage 2	318	632	-	1081	2739	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	9	8	117	75	8	682	52	-	-	950	-	-
Stage 1	11	43	-	422	472	-	-	-	-	-	-	-
Stage 2	645	472	-	214	42	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	9	8	117	46	8	682	52	-	-	950	-	-
Mov Cap-2 Maneuver	9	37	-	106	35	-	-	-	-	-	-	-
Stage 1	10	43	-	397	444	-	-	-	-	-	-	-
Stage 2	607	444	-	136	42	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	52.4	0	2.6	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	52	-	-	117	-	950	-
HCM Lane V/C Ratio	0.041	-	-	0.364	-	-	-
HCM Control Delay (s)	77.2	2.3	-	52.4	0	0	-
HCM Lane LOS	F	A	-	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.5	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	40	25	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	43	27	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	70	27	0
Stage 1	27	-	-
Stage 2	43	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	934	1048	1587
Stage 1	996	-	-
Stage 2	979	-	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	934	1048	1587
Mov Cap-2 Maneuver	934	-	-
Stage 1	996	-	-
Stage 2	979	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1587	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	76.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	30	5	0	60	20	540	15	40	2960	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	31	5	0	61	20	551	15	41	3020	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3433	3724	1526	1889	3732	283	3051	0	0	566	0	0
Stage 1	3117	3117	-	599	599	-	-	-	-	-	-	-
Stage 2	316	607	-	1290	3133	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 5	4	91	56	4	714	36	-	-	1002	-	-
Stage 1	~ 6	27	-	441	489	-	-	-	-	-	-	-
Stage 2	646	485	-	158	26	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 2	2	91	20	2	714	36	-	-	1002	-	-
Mov Cap-2 Maneuver	~ 2	2	-	20	2	-	-	-	-	-	-	-
Stage 1	~ 3	26	-	196	217	-	-	-	-	-	-	-
Stage 2	262	216	-	101	25	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 5551.8	32.7	6.8	0.1
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	36	-	-	5	195	1002	-	-
HCM Lane V/C Ratio	0.567	-	-10.204	0.34	0.041	-	-	-
HCM Control Delay (s)	194.7	-	\$ 5551.8	32.7	8.7	-	-	-
HCM Lane LOS	F	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	2	-	-	8.1	1.4	0.1	-	-

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

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.717
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						Santa Clara Ave					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:

Base Vol:	210	1730	140	190	990	100	160	200	140	80	250	160
Growth 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
Initial Bse:	210	1730	140	190	990	100	160	200	140	80	250	160
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	216	1784	144	196	1021	103	165	206	144	82	258	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	216	1784	144	196	1021	103	165	206	144	82	258	165
PCE 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
MLF 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
FinalVolume:	216	1784	144	196	1021	103	165	206	144	82	258	165

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.78	0.22	2.00	2.72	0.28	1.00	1.18	0.82	1.00	1.22	0.78
Final Sat.:	1600	4718	382	3200	4632	468	1600	2000	1400	1600	2073	1327

Capacity Analysis Module:

Vol/Sat:	0.14	0.38	0.38	0.06	0.22	0.22	0.10	0.10	0.10	0.05	0.12	0.12
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 1.019
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: F

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	350	1310	650	500	490	60	460	1030	150	320	1110	410
Growth 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
Initial Bse:	350	1310	650	500	490	60	460	1030	150	320	1110	410
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	376	1406	697	536	526	64	494	1105	161	343	1191	440
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	376	1406	697	536	526	64	494	1105	161	343	1191	440
PCE 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
MLF 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
FinalVolume:	376	1406	697	536	526	64	494	1105	161	343	1191	440
OvlAdjVol:	488									112		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.67	0.33	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4544	556	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.12	0.41	0.36	0.17	0.12	0.12	0.15	0.22	0.09	0.11	0.23	0.23
OvlAdjV/S:	0.25									0.06		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.651
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Tustin Centre					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	100	1750	80	110	660	120	70	5	70	60	20	240
Growth 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
Initial Bse:	100	1750	80	110	660	120	70	5	70	60	20	240
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	107	1878	86	118	708	129	75	5	75	64	21	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	1878	86	118	708	129	75	5	75	64	21	258
PCE 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
MLF 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
FinalVolume:	107	1878	86	118	708	129	75	5	75	64	21	258

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.54	0.46	0.93	0.07	1.00	0.75	0.25	1.00
Final Sat.:	1600	5100	1700	3200	4315	785	1587	113	1700	1275	425	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.07	0.37	0.05	0.04	0.16	0.16	0.04	0.05	0.04	0.04	0.05	0.15
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.678
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name: Sherry Ln - Cabrillo Park Ave 17th St
 Approach: North Bound South Bound East Bound West Bound
 Movement: L - T - R L - T - R L - T - R L - T - R

	North Bound			South Bound			East Bound			West Bound		
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	310	140	160	140	70	50	50	1110	115	145	1350	70
Growth 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
Initial Bse:	310	140	160	140	70	50	50	1110	115	145	1350	70
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	327	148	169	148	74	53	53	1171	121	153	1424	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	148	169	148	74	53	53	1171	121	153	1424	74
PCE 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
MLF 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
FinalVolume:	327	148	169	148	74	53	53	1171	121	153	1424	74

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.58	0.42	1.00	2.72	0.28	1.00	2.85	0.15
Final Sat.:	1600	1700	1700	1600	992	708	1600	4621	479	1600	4849	251

Capacity Analysis Module:

Vol/Sat:	0.20	0.09	0.10	0.09	0.07	0.07	0.03	0.25	0.25	0.10	0.29	0.29
Crit Moves:	****				****			****		****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
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 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C [15.1]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	15	0	0	40	0	1970	230	0	1780	80
Growth 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
Initial Bse:	0	0	15	0	0	40	0	1970	230	0	1780	80
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	16	0	0	43	0	2114	247	0	1910	86
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Volume:	0	0	16	0	0	43	0	2114	247	0	1910	86

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	652	xxxx	xxxx	680	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	415	xxxx	xxxx	398	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	415	xxxx	xxxx	398	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.04	xxxx	xxxx	0.11	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	14.0	xxxxx	xxxx	15.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	C	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shared Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	14.0			15.1			xxxxxxx			xxxxxxx		
ApproachLOS:	B			C			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.639
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	15	45	15	50	1290	620	440	1770	70
Growth 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
Initial Bse:	0	0	0	15	45	15	50	1290	620	440	1770	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96
PHF Volume:	0	0	0	16	47	16	52	1349	0	460	1851	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	16	47	16	52	1349	0	460	1851	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	16	47	16	52	1349	0	460	1851	73

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.75	0.25	1.00	3.00	1.00	1.00	2.89	0.11
Final Sat.:	0	0	0	1600	1275	425	1600	5100	1955	1600	4906	194

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.04	0.04	0.03	0.26	0.00	0.29	0.38	0.38
Crit Moves:				****			****			****		

Buildout 2035 without Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

PM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	1290	620	440	1770	70	0	0	0	15	45	15
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	52	1344	0	458	1844	73				16	47	16
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	62	2011	720	508	3245	128				88	66	22
Arrive On Green	0.04	0.44	0.00	0.32	0.72	0.72				0.06	0.06	0.06
Sat Flow, veh/h	1587	4550	1629	1587	4491	178				1587	1190	405
Grp Volume(v), veh/h	52	1344	0	458	1245	672				16	0	63
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1635				1587	0	1595
Q Serve(g_s), s	2.4	17.3	0.0	20.4	14.3	14.3				0.7	0.0	2.9
Cycle Q Clear(g_c), s	2.4	17.3	0.0	20.4	14.3	14.3				0.7	0.0	2.9
Prop In Lane	1.00		1.00	1.00		0.11				1.00		0.25
Lane Grp Cap(c), veh/h	62	2011	720	508	2192	1182				88	0	88
V/C Ratio(X)	0.83	0.67	0.00	0.90	0.57	0.57				0.18	0.00	0.71
Avail Cap(c_a), veh/h	161	2011	720	785	2528	1363				376	0	378
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	35.2	16.3	0.0	24.0	4.8	4.8				33.3	0.0	34.3
Incr Delay (d2), s/veh	23.8	0.9	0.0	9.4	0.2	0.4				1.0	0.0	10.2
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	1.5	7.4	0.0	10.2	5.9	6.5				0.3	0.0	1.5
LnGrp Delay(d),s/veh	59.0	17.2	0.0	33.3	5.1	5.3				34.3	0.0	44.5
LnGrp LOS	E	B		C	A	A				C		D
Approach Vol, veh/h		1396			2375							79
Approach Delay, s/veh		18.7			10.6							42.4
Approach LOS		B			B							D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			28.1	37.1		8.6	7.4	57.8				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			36.5	32.5		17.5	7.5	61.5				
Max Q Clear Time (g_c+I1), s			22.4	19.3		4.9	4.4	16.3				
Green Ext Time (p_c), s			1.2	12.4		0.2	0.0	37.0				
Intersection Summary												
HCM 2010 Ctrl Delay			14.2									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:

Base Vol:	0	0	840	0	0	580	0	1300	0	0	1700	0
Growth 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
Initial Bse:	0	0	840	0	0	580	0	1300	0	0	1700	0
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.93	0.93	0.00	0.93	0.93	0.00	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	0	0	0	0	0	0	0	1399	0	0	1830	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1399	0	0	1830	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	466	xxxx	xxxx	915	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	548	xxxx	xxxx	279	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	548	xxxx	xxxx	279	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:

Base Vol:	0	0	0	0	0	0	0	1610	530	0	1700	910
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1610	530	0	1700	910
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.00	0.95	0.95	0.00
PHF Volume:	0	0	0	0	0	0	0	1691	0	0	1786	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1691	0	0	1786	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.712
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	440	30	220	5	0	110	70	1540	0	0	2090	40
Growth 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
Initial Bse:	440	30	220	5	0	110	70	1540	0	0	2090	40
User 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
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	466	32	233	5	0	117	74	1631	0	0	2214	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	466	32	233	5	0	117	74	1631	0	0	2214	42
PCE 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
MLF 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
FinalVolume:	466	32	233	5	0	117	74	1631	0	0	2214	42

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.91	0.09	1.00	0.04	0.00	0.96	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	3252	148	1700	74	0	1626	1700	5100	0	0	6672	128

Capacity Analysis Module:

Vol/Sat:	0.14	0.21	0.14	0.07	0.00	0.07	0.04	0.32	0.00	0.00	0.33	0.33
Crit Moves:	****			****			****			****		

Buildout 2035 without Project
 9: SR-55 SB Ramps/Mimi's Cafe & 17th St

PM Peak
 HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1540	0	0	2090	40	440	30	220	5	0	110
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.99	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (prot)	1583	4550			5717		1504	1440	1346		1448	
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (perm)	1583	4550			5717		1504	1440	1346		1448	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	1638	0	0	2223	43	468	32	234	5	0	117
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	156	0	108	0
Lane Group Flow (vph)	74	1638	0	0	2264	0	262	258	55	0	14	0
Turn Type	Prot	NA			NA		Split	NA	Perm	Split	NA	
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	5.0	49.8			40.3		18.8	18.8	18.8		7.2	
Effective Green, g (s)	5.0	49.8			40.3		18.8	18.8	18.8		7.2	
Actuated g/C Ratio	0.06	0.56			0.45		0.21	0.21	0.21		0.08	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	88	2537			2580		316	303	283		116	
v/s Ratio Prot	0.05	c0.36			c0.40		0.17	c0.18			c0.01	
v/s Ratio Perm									0.04			
v/c Ratio	0.84	0.65			0.88		0.83	0.85	0.19		0.12	
Uniform Delay, d1	41.8	13.7			22.3		33.7	33.9	29.0		38.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	48.1	0.6			3.7		16.2	19.9	0.3		0.5	
Delay (s)	89.9	14.2			26.0		50.0	53.8	29.3		38.6	
Level of Service	F	B			C		D	D	C		D	
Approach Delay (s)		17.5			26.0			45.4			38.6	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			26.2				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			89.3				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			73.8%				ICU Level of Service		D			
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.717
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Base Vol:	360	90	100	110	30	150	140	1420	210	50	1630	35
Growth 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
Initial Bse:	360	90	100	110	30	150	140	1420	210	50	1630	35
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	387	97	107	118	32	161	150	1525	226	54	1751	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	97	107	118	32	161	150	1525	226	54	1751	38
PCE 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
MLF 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
FinalVolume:	387	97	107	118	32	161	150	1525	226	54	1751	38

Saturation Flow Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.94	0.06
Final Sat.:	3400	1700	1700	1700	283	1417	1700	5100	1700	1700	4993	107

Capacity Analysis Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Vol/Sat:	0.11	0.06	0.06	0.07	0.11	0.11	0.09	0.30	0.13	0.03	0.35	0.35
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.706
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	90	180	40	140	90	210	210	1330	50	60	1440	230
Growth 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
Initial Bse:	90	180	40	140	90	210	210	1330	50	60	1440	230
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	92	185	41	144	92	216	216	1366	51	62	1478	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	185	41	144	92	216	216	1366	51	62	1478	236
PCE 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
MLF 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
FinalVolume:	92	185	41	144	92	216	216	1366	51	62	1478	236

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.89	0.11	1.00	2.59	0.41
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4915	185	1700	4398	702

Capacity Analysis Module:

Vol/Sat:	0.05	0.11	0.02	0.08	0.05	0.13	0.13	0.28	0.28	0.04	0.34	0.34
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.308
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	0	0	1	0

Volume Module:

Base Vol:	5	370	130	30	190	5	5	5	0	70	0	130
Growth 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
Initial Bse:	5	370	130	30	190	5	5	5	0	70	0	130
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	5	391	137	32	201	5	5	5	0	74	0	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	391	137	32	201	5	5	5	0	74	0	137
PCE 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
MLF 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
FinalVolume:	5	391	137	32	201	5	5	5	0	74	0	137

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.48	0.52	1.00	1.95	0.05	0.50	0.50	0.00	1.00	0.00	1.00
Final Sat.:	1700	2516	884	1700	3313	87	850	850	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.16	0.16	0.02	0.06	0.06	0.00	0.01	0.00	0.04	0.00	0.08
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	10	0	0	0	10	2140	0	0	1000	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	11	0	0	0	11	2301	0	0	1075	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2250	3401	540	2861	3404	1151	1081	0	0	2301	0	0
Stage 1	1078	1078	-	2323	2323	-	-	-	-	-	-	-
Stage 2	1172	2323	-	538	1081	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	23	7	486	8	7	191	641	-	-	215	-	-
Stage 1	233	293	-	38	70	-	-	-	-	-	-	-
Stage 2	204	70	-	495	292	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	23	7	486	8	7	191	641	-	-	215	-	-
Mov Cap-2 Maneuver	23	7	-	8	7	-	-	-	-	-	-	-
Stage 1	229	293	-	37	69	-	-	-	-	-	-	-
Stage 2	200	69	-	484	292	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	80.8	0	0	0
HCM LOS	F	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	641	-	-	63	-	215	-
HCM Lane V/C Ratio	0.017	-	-	0.256	-	-	-
HCM Control Delay (s)	10.7	-	-	80.8	0	0	-
HCM Lane LOS	B	-	-	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	-	0	-

Intersection												
Int Delay, s/veh	0.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	50	0	0	0	10	2130	0	0	970	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	54	0	0	0	11	2290	0	0	1043	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2232	3377	543	2729	3398	1145	1086	0	0	2290	0	0
Stage 1	1065	1065	-	2312	2312	-	-	-	-	-	-	-
Stage 2	1167	2312	-	417	1086	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	33	7	414	15	7	193	356	-	-	217	-	-
Stage 1	183	297	-	38	71	-	-	-	-	-	-	-
Stage 2	201	71	-	552	291	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	33	7	414	13	7	193	356	-	-	217	-	-
Mov Cap-2 Maneuver	102	54	-	33	54	-	-	-	-	-	-	-
Stage 1	183	297	-	38	71	-	-	-	-	-	-	-
Stage 2	201	71	-	480	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	0	0.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	356	-	-	414	-	217	-
HCM Lane V/C Ratio	0.03	-	-	0.13	-	-	-
HCM Control Delay (s)	15.4	0	-	15	0	0	-
HCM Lane LOS	C	A	-	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	80	40	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	87	43	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	130	43	43 0
Stage 1	43	-	- -
Stage 2	87	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	864	1027	1566 -
Stage 1	979	-	- -
Stage 2	936	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	864	1027	1566 -
Mov Cap-2 Maneuver	864	-	- -
Stage 1	979	-	- -
Stage 2	936	-	- -

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1566	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	17.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	0	25	5	5	60	50	2130	25	45	1030	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	26	5	5	62	52	2219	26	47	1073	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2409	3542	563	2859	3555	1122	1125	0	0	2245	0	0
Stage 1	1193	1193	-	2336	2336	-	-	-	-	-	-	-
Stage 2	1216	2349	-	523	1219	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 25	6	402	12	6	200	340	-	-	227	-	-
Stage 1	149	258	-	37	69	-	-	-	-	-	-	-
Stage 2	188	68	-	475	251	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	4	402	8	~ 4	200	340	-	-	227	-	-
Mov Cap-2 Maneuver	-	4	-	8	~ 4	-	-	-	-	-	-	-
Stage 1	126	205	-	31	58	-	-	-	-	-	-	-
Stage 2	100	58	-	352	199	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 850.3	0.4	1
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	340	-	-	- 32	227	-	-
HCM Lane V/C Ratio	0.153	-	-	- 2.279	0.206	-	-
HCM Control Delay (s)	17.5	-	-	- \$ 850.3	24.9	-	-
HCM Lane LOS	C	-	-	- F	C	-	-
HCM 95th %tile Q(veh)	0.5	-	-	- 8.4	0.8	-	-

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

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.531
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Santa Clara Ave					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Base Vol:	152	818	112	139	988	102	154	141	157	81	126	123
Growth 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
Initial Bse:	152	818	112	139	988	102	154	141	157	81	126	123
User 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
PHF 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
PHF Volume:	153	822	113	140	993	103	155	142	158	81	127	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	822	113	140	993	103	155	142	158	81	127	124
PCE 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
MLF 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
FinalVolume:	153	822	113	140	993	103	155	142	158	81	127	124

Saturation Flow Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.64	0.36	2.00	2.72	0.28	1.00	1.00	1.00	1.00	1.01	0.99
Final Sat.:	1600	4486	614	3200	4623	477	1600	1700	1700	1600	1720	1680

Capacity Analysis Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Vol/Sat:	0.10	0.18	0.18	0.04	0.21	0.21	0.10	0.08	0.09	0.05	0.07	0.07
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.615
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	193	302	186	535	367	70	470	889	137	275	755	407
Growth 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
Initial Bse:	193	302	186	535	367	70	470	889	137	275	755	407
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	198	310	191	549	376	72	482	912	141	282	774	417
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	310	191	549	376	72	482	912	141	282	774	417
PCE 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
MLF 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
FinalVolume:	198	310	191	549	376	72	482	912	141	282	774	417
OvlAdjVol:	18									82		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.52	0.48	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4283	817	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.09	0.10	0.17	0.09	0.09	0.15	0.18	0.08	0.09	0.15	0.21
OvlAdjV/S:	0.01									0.04		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.323
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	91	513	28	108	514	148	59	5	73	16	15	66
Growth 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
Initial Bse:	91	513	28	108	514	148	59	5	73	16	15	66
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	96	539	29	113	540	155	62	5	77	17	16	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	539	29	113	540	155	62	5	77	17	16	69
PCE 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
MLF 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
FinalVolume:	96	539	29	113	540	155	62	5	77	17	16	69

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.33	0.67	0.92	0.08	1.00	0.52	0.48	1.00
Final Sat.:	1600	5100	1700	3200	3960	1140	1567	133	1700	877	823	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.11	0.02	0.04	0.14	0.14	0.04	0.04	0.05	0.01	0.02	0.04
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.566
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:		17th St														
Approach:		North Bound			South Bound			East Bound			West Bound					
Movement:		L	T	R	L	T	R	L	T	R	L	T	R			
Control:		Permitted			Permitted			Protected			Protected					
Rights:		Include			Include			Include			Include					
Min. Green:		0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:		1	0	1	0	1	1	0	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	175	60	99	126	77	73	61	1065	97	122	1014	86
Growth 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
Initial Bse:	175	60	99	126	77	73	61	1065	97	122	1014	86
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	180	62	102	130	79	75	63	1096	100	126	1043	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	62	102	130	79	75	63	1096	100	126	1043	88
PCE 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
MLF 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
FinalVolume:	180	62	102	130	79	75	63	1096	100	126	1043	88

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.51	0.49	1.00	2.75	0.25	1.00	2.77	0.23
Final Sat.:	1600	1700	1700	1600	873	827	1600	4674	426	1600	4701	399

Capacity Analysis Module:

Vol/Sat:	0.11	0.04	0.06	0.08	0.09	0.09	0.04	0.23	0.23	0.08	0.22	0.22
Crit Moves:	****				****			****			****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.8]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound			West Bound							
Movement:	L	T	R		L	T	R		L	T	R	L	T	R					
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled							
Rights:	Include				Include				Include			Include							
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	16		0	0	49		0	1563	79	0	1422	60
Growth 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
Initial Bse:	0	0	16		0	0	49		0	1563	79	0	1422	60
User 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
PHF Adj:	0.98	0.98	0.98		0.98	0.98	0.98		0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	16		0	0	50		0	1592	80	0	1448	61
Reduct Vol:	0	0	0		0	0	0		0	0	0	0	0	0
FinalVolume:	0	0	16		0	0	50		0	1592	80	0	1448	61

Critical Gap Module:	North Bound				South Bound				East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound				South Bound				East Bound			West Bound		
Cnflct Vol:	xxxx	xxxx	438		xxxx	xxxx	513		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	572		xxxx	xxxx	511		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	572		xxxx	xxxx	511		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.03		xxxx	xxxx	0.10		xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound				South Bound				East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	0.1		xxxx	xxxx	0.3		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.5		xxxxx	xxxx	12.8		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B		*	*	B		*	*	*	*	*	*
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*		*	*	*		*	*	*	*	*	*
ApproachDel:		11.5				12.8			xxxxxxx			xxxxxxx		
ApproachLOS:		B				B			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St






















Cycle (sec): 100 Critical Vol./Cap.(X): 0.685
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	32	31	14	48	963	492	481	1518	52
Growth 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
Initial Bse:	0	0	0	32	31	14	48	963	492	481	1518	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.00	0.81	0.81	0.81
PHF Volume:	0	0	0	39	38	17	59	1186	0	592	1869	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	39	38	17	59	1186	0	592	1869	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	39	38	17	59	1186	0	592	1869	64

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.69	0.31	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	0	0	0	1600	1171	529	1600	5100	1955	1600	4931	169

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.00	0.00	0.00	0.02	0.03	0.03	0.04	0.23	0.00	0.37	0.38	0.38
Crit Moves:				****			****			****		

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	963	492	481	1518	52	0	0	0	32	31	14
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	59	1189	0	594	1874	64				40	38	17
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81				0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	72	1614	578	645	3235	110				88	61	27
Arrive On Green	0.05	0.35	0.00	0.41	0.72	0.72				0.06	0.06	0.06
Sat Flow, veh/h	1587	4550	1629	1587	4519	154				1587	1092	489
Grp Volume(v), veh/h	59	1189	0	594	1257	681				40	0	55
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1639				1587	0	1580
Q Serve(g_s), s	2.7	16.8	0.0	26.1	14.8	14.8				1.8	0.0	2.5
Cycle Q Clear(g_c), s	2.7	16.8	0.0	26.1	14.8	14.8				1.8	0.0	2.5
Prop In Lane	1.00		1.00	1.00		0.09				1.00		0.31
Lane Grp Cap(c), veh/h	72	1614	578	645	2172	1174				88	0	88
V/C Ratio(X)	0.82	0.74	0.00	0.92	0.58	0.58				0.45	0.00	0.63
Avail Cap(c_a), veh/h	173	1640	587	917	2516	1360				378	0	376
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	34.8	20.7	0.0	20.7	5.1	5.1				33.7	0.0	34.0
Incr Delay (d2), s/veh	20.3	1.7	0.0	11.1	0.2	0.5				3.6	0.0	7.2
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	1.6	7.2	0.0	13.4	6.0	6.8				0.9	0.0	1.3
LnGrp Delay(d),s/veh	55.1	22.5	0.0	31.8	5.3	5.5				37.3	0.0	41.2
LnGrp LOS	E	C		C	A	A				D		D
Approach Vol, veh/h		1248			2532						95	
Approach Delay, s/veh		24.0			11.6						39.5	
Approach LOS		C			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			34.4	30.6		8.6	7.8	57.1				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			42.5	26.5		17.5	8.0	61.0				
Max Q Clear Time (g_c+I1), s			28.1	18.8		4.5	4.7	16.8				
Green Ext Time (p_c), s			1.8	7.3		0.3	0.0	35.2				
Intersection Summary												
HCM 2010 Ctrl Delay			16.3									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	693		0	0	457		0	996	0		0	1594	0	
Growth 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	
Initial Bse:	0	0	693		0	0	457		0	996	0		0	1594	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.94	0.94	0.00		0.94	0.94	0.00		0.94	0.94	0.94		0.94	0.94	0.94	
PHF Volume:	0	0	0		0	0	0		0	1065	0		0	1705	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1065	0		0	1705	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflct Vol:	xxxx	xxxx	355		xxxx	xxxx	852		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	647		xxxx	xxxx	307		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	647		xxxx	xxxx	307		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00		xxxx	xxxx	0.00		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	*		*	*	*	
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound				South Bound				East Bound			West Bound		
Movement:	L	T	R		L	T	R		L	T	R	L	T	R
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled		
Rights:	Include				Include				Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:

Base Vol:	0	0	0	0	0	0	0	1310	393	0	1594	534
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1310	393	0	1594	534
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.00	0.93	0.93	0.00
PHF Volume:	0	0	0	0	0	0	0	1404	0	0	1708	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1404	0	0	1708	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.631
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Mimi's Café - SR55 NB Ramps						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	470	38	435	2	0	123	75	1254	0	0	1496	31
Growth 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
Initial Bse:	470	38	435	2	0	123	75	1254	0	0	1496	31
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	518	42	480	2	0	136	83	1383	0	0	1649	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	518	42	480	2	0	136	83	1383	0	0	1649	34
PCE 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
MLF 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
FinalVolume:	518	42	480	2	0	136	83	1383	0	0	1649	34

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.50	0.12	1.38	0.01	0.01	0.98	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2542	206	2353	27	0	1673	1700	5100	0	0	6662	138

Capacity Analysis Module:

Vol/Sat:	0.20	0.20	0.20	0.08	0.00	0.08	0.05	0.27	0.00	0.00	0.25	0.25
Crit Moves:	****					****	****				****	

Buildout 2035 without Project
 9: SR-55 SB Ramps/Mimi's Cafe & 17th St

MD Peak
 HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1254	0	0	1496	31	470	38	435	2	0	123
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.94	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1389	1346		1444	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1389	1346		1444	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	82	1378	0	0	1644	34	516	42	478	2	0	135
RTOR Reduction (vph)	0	0	0	0	3	0	0	25	230	0	124	0
Lane Group Flow (vph)	82	1378	0	0	1675	0	356	325	100	0	13	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	6.0	41.1			30.6		25.6	25.6	25.6		7.3	
Effective Green, g (s)	6.0	41.1			30.6		25.6	25.6	25.6		7.3	
Actuated g/C Ratio	0.07	0.47			0.35		0.29	0.29	0.29		0.08	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	108	2137			1998		440	406	393		120	
v/s Ratio Prot	0.05	c0.30			c0.29		c0.24	0.23			c0.01	
v/s Ratio Perm									0.07			
v/c Ratio	0.76	0.64			0.84		0.81	0.80	0.25		0.11	
Uniform Delay, d1	40.0	17.6			26.2		28.7	28.6	23.7		37.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	25.9	0.7			3.3		10.5	10.5	0.3		0.4	
Delay (s)	65.9	18.3			29.4		39.2	39.1	24.0		37.5	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		21.0			29.4			34.3			37.5	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	87.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.627
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	233	53	41	66	38	182	159	1290	245	48	1105	40
Growth 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
Initial Bse:	233	53	41	66	38	182	159	1290	245	48	1105	40
User 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
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	261	59	46	74	43	204	178	1443	274	54	1236	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	261	59	46	74	43	204	178	1443	274	54	1236	45
PCE 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
MLF 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
FinalVolume:	261	59	46	74	43	204	178	1443	274	54	1236	45

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	3400	1700	1700	1700	294	1406	1700	5100	1700	1700	4922	178

Capacity Analysis Module:

Vol/Sat:	0.08	0.03	0.03	0.04	0.14	0.14	0.10	0.28	0.16	0.03	0.25	0.25
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.562
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	77	39	25	73	54	178	203	1177	54	48	922	90
Growth 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
Initial Bse:	77	39	25	73	54	178	203	1177	54	48	922	90
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	84	43	27	80	59	195	222	1289	59	53	1010	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	43	27	80	59	195	222	1289	59	53	1010	99
PCE 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
MLF 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
FinalVolume:	84	43	27	80	59	195	222	1289	59	53	1010	99

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.87	0.13	1.00	2.73	0.27
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4876	224	1700	4646	454

Capacity Analysis Module:

Vol/Sat:	0.05	0.03	0.02	0.05	0.03	0.11	0.13	0.26	0.26	0.03	0.22	0.22
Crit Moves:	****					****	****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 Without Project Traffic Conditions
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Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.201
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	0	0	1	0

Volume Module:

Base Vol:	0	169	29	19	264	5	3	0	0	47	2	80
Growth 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
Initial Bse:	0	169	29	19	264	5	3	0	0	47	2	80
User 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
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	199	34	22	311	6	4	0	0	55	2	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	199	34	22	311	6	4	0	0	55	2	94
PCE 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
MLF 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
FinalVolume:	0	199	34	22	311	6	4	0	0	55	2	94

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.71	0.29	1.00	1.96	0.04	1.00	0.00	0.00	0.96	0.04	1.00
Final Sat.:	1700	2902	498	1700	3337	63	1700	0	0	1631	69	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.07	0.07	0.01	0.09	0.09	0.00	0.00	0.00	0.03	0.03	0.06
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	0.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	11	0	0	0	10	1061	0	0	872	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	11	0	0	0	10	1083	0	0	890	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1455	1996	448	1548	1999	541	896	0	0	1083	0	0
Stage 1	893	893	-	1103	1103	-	-	-	-	-	-	-
Stage 2	562	1103	-	445	896	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	91	60	558	78	59	485	753	-	-	640	-	-
Stage 1	303	358	-	225	285	-	-	-	-	-	-	-
Stage 2	479	285	-	562	357	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	90	59	558	76	58	485	753	-	-	640	-	-
Mov Cap-2 Maneuver	90	59	-	76	58	-	-	-	-	-	-	-
Stage 1	299	358	-	222	281	-	-	-	-	-	-	-
Stage 2	473	281	-	551	357	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.4	0	0.1	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	753	-	-	264	-	640	-
HCM Lane V/C Ratio	0.014	-	-	0.054	-	-	-
HCM Control Delay (s)	9.8	-	-	19.4	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	-	0	-

Intersection												
Int Delay, s/veh	0.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	0	66	0	0	0	8	1059	0	0	876	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	67	0	0	0	8	1070	0	0	885	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1450	1985	457	1440	1999	535	913	0	0	1070	0	0
Stage 1	899	899	-	1086	1086	-	-	-	-	-	-	-
Stage 2	551	1086	-	354	913	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	112	61	471	114	59	490	431	-	-	647	-	-
Stage 1	240	356	-	226	291	-	-	-	-	-	-	-
Stage 2	471	291	-	602	350	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	108	58	471	94	56	490	431	-	-	647	-	-
Mov Cap-2 Maneuver	180	168	-	172	165	-	-	-	-	-	-	-
Stage 1	229	356	-	216	278	-	-	-	-	-	-	-
Stage 2	449	278	-	517	350	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	0	0.4	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	431	-	-	471	-	647	-
HCM Lane V/C Ratio	0.019	-	-	0.142	-	-	-
HCM Control Delay (s)	13.5	0.3	-	13.9	0	0	-
HCM Lane LOS	B	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	-	0	-

Intersection

Int Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	0	0	60	49	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	65	53	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	118	53	53
Stage 1	53	-	-
Stage 2	65	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	878	1014	1553
Stage 1	970	-	-
Stage 2	958	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	878	1014	1553
Mov Cap-2 Maneuver	878	-	-
Stage 1	970	-	-
Stage 2	958	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1553	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	8.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	3	49	22	3	61	55	989	19	43	1000	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	3	51	23	3	64	57	1030	20	45	1042	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1779	2313	538	1663	2320	525	1075	0	0	1050	0	0
Stage 1	1148	1148	-	1155	1155	-	-	-	-	-	-	-
Stage 2	631	1165	-	508	1165	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	67	37	417	81	37	497	360	-	-	659	-	-
Stage 1	160	272	-	205	269	-	-	-	-	-	-	-
Stage 2	423	267	-	486	267	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	45	29	417	55	29	497	360	-	-	659	-	-
Mov Cap-2 Maneuver	45	29	-	55	29	-	-	-	-	-	-	-
Stage 1	135	253	-	173	226	-	-	-	-	-	-	-
Stage 2	306	225	-	392	249	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	156.9	70.9	0.9	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	360	-	-	92	137	659	-	-
HCM Lane V/C Ratio	0.159	-	-	0.928	0.654	0.068	-	-
HCM Control Delay (s)	16.9	-	-	156.9	70.9	10.9	-	-
HCM Lane LOS	C	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-	5.3	3.5	0.2	-	-

Appendix J – Buildout 2035 With Project Conditions Intersection Analysis Worksheets

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.976
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Base Vol:	70	470	120	120	2860	100	110	320	230	140	220	120
Growth 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
Initial Bse:	70	470	120	120	2860	100	110	320	230	140	220	120
Added Vol:	22	9	9	0	9	0	0	0	9	9	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	92	479	129	120	2869	100	110	320	239	149	220	120
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	95	494	133	124	2961	103	114	330	247	154	227	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	95	494	133	124	2961	103	114	330	247	154	227	124
PCE 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
MLF 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
FinalVolume:	95	494	133	124	2961	103	114	330	247	154	227	124

Saturation Flow Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.36	0.64	2.00	2.90	0.10	1.00	1.14	0.86	1.00	1.29	0.71
Final Sat.:	1600	4018	1082	3200	4928	172	1600	1946	1454	1600	2200	1200

Capacity Analysis Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Vol/Sat:	0.06	0.12	0.12	0.04	0.60	0.60	0.07	0.17	0.17	0.10	0.10	0.10
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Buildout Year 2035 Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.949
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	0	1	0	1	1	0	1

Volume Module:	Tustin Ave			Tustin Ave			Santa Clara Ave			Santa Clara Ave		
Base Vol:	70	470	120	120	2860	100	110	320	230	140	220	120
Growth 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
Initial Bse:	70	470	120	120	2860	100	110	320	230	140	220	120
Added Vol:	22	9	9	0	9	0	0	0	9	9	0	0
PasserByVol:	8	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	479	129	120	2869	100	110	320	239	149	220	120
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	103	494	133	124	2961	103	114	330	247	154	227	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	103	494	133	124	2961	103	114	330	247	154	227	124
PCE 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
MLF 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
FinalVolume:	103	494	133	124	2961	103	114	330	247	154	227	124

Saturation Flow Module:	Tustin Ave			Tustin Ave			Santa Clara Ave			Santa Clara Ave		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	2.00	2.36	0.64	2.00	2.90	0.10	1.00	1.14	0.86	1.00	1.29	0.71
Final Sat.:	3200	4018	1082	3200	4928	172	1600	1946	1454	1600	2200	1200

Capacity Analysis Module:	Tustin Ave			Tustin Ave			Santa Clara Ave			Santa Clara Ave		
Vol/Sat:	0.03	0.12	0.12	0.04	0.60	0.60	0.07	0.17	0.17	0.10	0.10	0.10
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.839
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	120	210	260	600	1950	30	200	760	150	600	960	250
Growth 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
Initial Bse:	120	210	260	600	1950	30	200	760	150	600	960	250
Added Vol:	0	9	0	39	9	0	14	0	0	0	13	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	219	260	639	1959	30	214	760	150	600	973	268
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	124	226	269	660	2024	31	221	785	155	620	1005	277
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	124	226	269	660	2024	31	221	785	155	620	1005	277
PCE 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
MLF 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
FinalVolume:	124	226	269	660	2024	31	221	785	155	620	1005	277
OvlAdjVol:	0									0		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	5023	77	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.07	0.14	0.21	0.40	0.40	0.07	0.15	0.09	0.19	0.20	0.14
OvlAdjV/S:	0.00									0.00		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Buildout Year 2035 Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.839
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	1	0	2	1	0	2	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	120	210	260	600	1950	30	200	760	150	600	960	250
Growth 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
Initial Bse:	120	210	260	600	1950	30	200	760	150	600	960	250
Added Vol:	0	9	0	39	9	0	14	0	0	0	13	18
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	219	260	639	1959	30	214	760	150	600	973	268
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	124	226	269	660	2024	31	221	785	155	620	1005	277
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	124	226	269	660	2024	31	221	785	155	620	1005	277
PCE 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
MLF 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
FinalVolume:	124	226	269	660	2024	31	221	785	155	620	1005	277
OvlAdjVol:	0									0		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	3.00	1.00	2.00	2.95	0.05	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1955	3200	5023	77	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.04	0.04	0.14	0.21	0.40	0.40	0.07	0.15	0.09	0.19	0.20	0.14
OvlAdjV/S:	0.00									0.00		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.656
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:

Base Vol:	40	480	140	230	2370	80	30	20	90	30	10	40
Growth 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
Initial Bse:	40	480	140	230	2370	80	30	20	90	30	10	40
Added Vol:	0	9	0	0	9	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	40	489	140	230	2379	80	30	20	90	30	10	40
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	42	513	147	241	2494	84	31	21	94	31	10	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	42	513	147	241	2494	84	31	21	94	31	10	42
PCE 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
MLF 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
FinalVolume:	42	513	147	241	2494	84	31	21	94	31	10	42

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.90	0.10	0.60	0.40	1.00	0.75	0.25	1.00
Final Sat.:	1600	5100	1700	3200	4934	166	1020	680	1700	1275	425	1700

Capacity Analysis Module:

Vol/Sat:	0.03	0.10	0.09	0.08	0.51	0.51	0.02	0.03	0.06	0.02	0.02	0.02
Crit Moves:	****			****			****		****	****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.567
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	135	40	100	100	100	30	15	850	240	180	1030	35
Growth 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
Initial Bse:	135	40	100	100	100	30	15	850	240	180	1030	35
Added Vol:	0	0	5	0	0	0	0	9	0	4	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	40	105	100	100	30	15	859	240	184	1039	35
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	142	42	111	105	105	32	16	904	253	194	1094	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	42	111	105	105	32	16	904	253	194	1094	37
PCE 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
MLF 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
FinalVolume:	142	42	111	105	105	32	16	904	253	194	1094	37

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.77	0.23	1.00	2.34	0.66	1.00	2.90	0.10
Final Sat.:	1600	1700	1700	1600	1308	392	1600	3986	1114	1600	4934	166

Capacity Analysis Module:

Vol/Sat:	0.09	0.02	0.07	0.07	0.08	0.08	0.01	0.23	0.23	0.12	0.22	0.22
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[15.1]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	120		0	0	25		0	1600	25		0	1800	40	
Growth 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	
Initial Bse:	0	0	120		0	0	25		0	1600	25		0	1800	40	
Added Vol:	0	0	0		0	0	13		0	39	0		0	18	23	
PasserByVol:	0	0	0		0	0	6		0	0	0		0	0	10	
Initial Fut:	0	0	120		0	0	44		0	1639	25		0	1818	73	
User 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	
PHF Adj:	0.96	0.96	0.96		0.96	0.96	0.96		0.96	0.96	0.96		0.96	0.96	0.96	
PHF Volume:	0	0	125		0	0	46		0	1713	26		0	1900	76	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	125		0	0	46		0	1713	26		0	1900	76	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	441	xxxx	xxxx	671	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	569	xxxx	xxxx	403	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	569	xxxx	xxxx	403	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.22	xxxx	xxxx	0.11	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	0.8	xxxx	xxxx	0.4	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	13.1	xxxxx	xxxx	15.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	B	*	*	C	*	*	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	13.1				15.1				xxxxxxx				xxxxxxx			
ApproachLOS:	B				C				*				*			

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.738
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	50	250	25	20	1070	640	430	1820	50
Growth 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
Initial Bse:	0	0	0	50	250	25	20	1070	640	430	1820	50
Added Vol:	0	0	0	0	0	0	0	26	13	0	41	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	50	250	25	20	1096	653	430	1861	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.94
PHF Volume:	0	0	0	53	267	27	21	1168	0	458	1984	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	53	267	27	21	1168	0	458	1984	53
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	53	267	27	21	1168	0	458	1984	53

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.91	0.09	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	0	0	0	1600	1545	155	1600	5100	1955	1600	4967	133

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.03	0.17	0.17	0.01	0.23	0.00	0.29	0.40	0.40
Crit Moves:				****			****			****		

Buildout 2035 with Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

AM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	1096	653	430	1861	50	0	0	0	50	250	25
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	21	1166	0	457	1980	53				53	266	27
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	29	1476	529	494	2813	75				332	312	32
Arrive On Green	0.02	0.32	0.00	0.31	0.62	0.62				0.21	0.21	0.21
Sat Flow, veh/h	1587	4550	1629	1587	4557	122				1587	1489	151
Grp Volume(v), veh/h	21	1166	0	457	1317	716				53	0	293
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1645				1587	0	1640
Q Serve(g_s), s	1.1	20.3	0.0	24.2	25.6	25.7				2.4	0.0	15.0
Cycle Q Clear(g_c), s	1.1	20.3	0.0	24.2	25.6	25.7				2.4	0.0	15.0
Prop In Lane	1.00		1.00	1.00		0.07				1.00		0.09
Lane Grp Cap(c), veh/h	29	1476	529	494	1872	1016				332	0	343
V/C Ratio(X)	0.72	0.79	0.00	0.93	0.70	0.70				0.16	0.00	0.85
Avail Cap(c_a), veh/h	108	1490	534	593	1921	1042				465	0	481
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	42.5	26.7	0.0	29.0	11.3	11.3				28.1	0.0	33.1
Incr Delay (d2), s/veh	28.5	2.9	0.0	18.6	1.1	2.1				0.2	0.0	10.3
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	0.7	8.8	0.0	13.1	10.9	12.1				1.1	0.0	7.7
LnGrp Delay(d),s/veh	71.0	29.6	0.0	47.6	12.4	13.4				28.4	0.0	43.4
LnGrp LOS	E	C		D	B	B				C		D
Approach Vol, veh/h		1187			2490						346	
Approach Delay, s/veh		30.4			19.2						41.1	
Approach LOS		C			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			31.6	32.7		22.7	6.1	58.2				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			32.5	28.5		25.5	5.9	55.1				
Max Q Clear Time (g_c+I1), s			26.2	22.3		17.0	3.1	27.7				
Green Ext Time (p_c), s			0.8	6.0		1.2	0.0	24.0				
Intersection Summary												
HCM 2010 Ctrl Delay			24.4									
HCM 2010 LOS			C									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	780		0	0	620		0	1120	0		0	1680	0	
Growth 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	
Initial Bse:	0	0	780		0	0	620		0	1120	0		0	1680	0	
Added Vol:	0	0	0		0	0	14		0	26	0		0	27	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	780		0	0	634		0	1146	0		0	1707	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.85	0.85	0.00		0.85	0.85	0.00		0.85	0.85	0.85		0.85	0.85	0.85	
PHF Volume:	0	0	0		0	0	0		0	1347	0		0	2006	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1347	0		0	2006	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9		xxxxx	xxxx	6.9		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		xxxxx	xxxx	3.3		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	449		xxxx	xxxx	1003		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	563		xxxx	xxxx	244		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	563		xxxx	xxxx	244		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00		xxxx	xxxx	0.00		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	*		*	*	*	
Movement:	LT	LTR	RT		LT	LTR	RT		LT	LTR	RT		LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxxx				xxxxxxx				xxxxxxx				xxxxxxx			
ApproachLOS:	*				*				*				*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1500	400	0	1680	810
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1500	400	0	1680	810
Added Vol:	0	0	0	0	0	0	0	13	13	0	27	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1513	413	0	1707	810
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.00	0.94	0.94	0.00
PHF Volume:	0	0	0	0	0	0	0	1615	0	0	1822	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1615	0	0	1822	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.576
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	410	30	390	1	0	110	30	1470	0	0	1970	40
Growth 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
Initial Bse:	410	30	390	1	0	110	30	1470	0	0	1970	40
Added Vol:	14	0	0	0	0	0	0	13	0	0	14	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	424	30	390	1	0	110	30	1483	0	0	1984	40
User Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
PHF 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
PHF Volume:	409	29	376	1	0	106	29	1430	0	0	1913	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	409	29	376	1	0	106	29	1430	0	0	1913	39
PCE 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
MLF 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
FinalVolume:	409	29	376	1	0	106	29	1430	0	0	1913	39

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.51	0.11	1.38	0.01	0.00	0.99	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2562	181	2357	15	0	1685	1700	5100	0	0	6666	134

Capacity Analysis Module:

Vol/Sat:	0.16	0.16	0.16	0.06	0.00	0.06	0.02	0.28	0.00	0.00	0.29	0.29
Crit Moves:	****			****			****			****		

Buildout 2035 with Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

AM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1483	0	0	1984	40	424	30	390	1	0	110
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.93	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1386	1346		1443	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1386	1346		1443	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	31	1545	0	0	2067	42	442	31	406	1	0	115
RTOR Reduction (vph)	0	0	0	0	2	0	0	27	207	0	108	0
Lane Group Flow (vph)	31	1545	0	0	2107	0	305	271	69	0	8	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	2.5	46.6			39.6		21.7	21.7	21.7		5.6	
Effective Green, g (s)	2.5	46.6			39.6		21.7	21.7	21.7		5.6	
Actuated g/C Ratio	0.03	0.53			0.45		0.25	0.25	0.25		0.06	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	45	2425			2589		373	344	334		92	
v/s Ratio Prot	0.02	c0.34			c0.37		c0.20	0.20			c0.01	
v/s Ratio Perm									0.05			
v/c Ratio	0.69	0.64			0.81		0.82	0.79	0.21		0.09	
Uniform Delay, d1	42.1	14.4			20.7		31.0	30.7	26.0		38.5	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	35.8	0.6			2.1		13.0	11.3	0.3		0.4	
Delay (s)	77.9	15.0			22.8		44.0	42.0	26.3		38.9	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		16.2			22.8			37.8			38.9	
Approach LOS		B			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			23.8				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			87.4				Sum of lost time (s)		18.0			
Intersection Capacity Utilization			68.9%				ICU Level of Service		C			
Analysis Period (min)			15									
c	Critical Lane Group											

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.600
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	140	25	25	50	60	110	60	1440	360	140	1760	50
Growth 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
Initial Bse:	140	25	25	50	60	110	60	1440	360	140	1760	50
Added Vol:	5	0	0	0	0	0	0	9	4	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	145	25	25	50	60	110	60	1449	364	140	1769	50
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	149	26	26	51	62	113	62	1491	374	144	1820	51
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	149	26	26	51	62	113	62	1491	374	144	1820	51
PCE 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
MLF 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
FinalVolume:	149	26	26	51	62	113	62	1491	374	144	1820	51

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.35	0.65	1.00	3.00	1.00	1.00	2.92	0.08
Final Sat.:	3400	1700	1700	1700	600	1100	1700	5100	1700	1700	4960	140

Capacity Analysis Module:

Vol/Sat:	0.04	0.02	0.02	0.03	0.10	0.10	0.04	0.29	0.22	0.08	0.37	0.37
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.697
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	25	35	25	300	290	390	120	1400	40	50	1530	80
Growth 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
Initial Bse:	25	35	25	300	290	390	120	1400	40	50	1530	80
Added Vol:	0	0	0	0	0	0	0	9	0	0	9	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	25	35	25	300	290	390	120	1409	40	50	1539	80
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	26	36	26	307	297	399	123	1442	41	51	1575	82
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	26	36	26	307	297	399	123	1442	41	51	1575	82
PCE 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
MLF 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
FinalVolume:	26	36	26	307	297	399	123	1442	41	51	1575	82

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.92	0.08	1.00	2.85	0.15
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4959	141	1700	4848	252

Capacity Analysis Module:

Vol/Sat:	0.02	0.02	0.02	0.18	0.17	0.23	0.07	0.29	0.29	0.03	0.32	0.32
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.427
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	0	1	0	1	0

Volume Module:

Base Vol:	0	110	50	20	500	5	0	5	0	280	0	60
Growth 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
Initial Bse:	0	110	50	20	500	5	0	5	0	280	0	60
Added Vol:	0	5	0	0	4	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	115	50	20	504	5	0	5	0	280	0	60
User 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
PHF Adj:	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
PHF Volume:	0	137	59	24	599	6	0	6	0	333	0	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	137	59	24	599	6	0	6	0	333	0	71
PCE 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
MLF 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
FinalVolume:	0	137	59	24	599	6	0	6	0	333	0	71

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.39	0.61	1.00	1.98	0.02	0.00	1.00	0.00	1.00	0.00	1.00
Final Sat.:	1700	2370	1030	1700	3367	33	0	1700	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.06	0.06	0.01	0.18	0.18	0.00	0.00	0.00	0.20	0.00	0.04
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	5.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	20	24	0	31	2	625	20	39	2590	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	21	26	0	33	2	665	21	41	2755	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3181	3534	1383	2141	3529	343	2766	0	0	686	0	0
Stage 1	2844	2844	-	680	680	-	-	-	-	-	-	-
Stage 2	337	690	-	1461	2849	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	4	6	133	28	6	653	140	-	-	904	-	-
Stage 1	17	37	-	407	449	-	-	-	-	-	-	-
Stage 2	651	444	-	135	37	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	4	6	133	~ 22	6	653	140	-	-	904	-	-
Mov Cap-2 Maneuver	4	6	-	~ 22	6	-	-	-	-	-	-	-
Stage 1	17	35	-	401	443	-	-	-	-	-	-	-
Stage 2	609	438	-	108	35	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.2	\$ 338	0.1	0.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	140	-	-	133	48	904	-	-
HCM Lane V/C Ratio	0.015	-	-	0.16	1.219	0.046	-	-
HCM Control Delay (s)	31.1	-	-	37.2	\$ 338	9.2	-	-
HCM Lane LOS	D	-	-	E	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	5.4	0.1	-	-

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

Buildout 2035 with Project (with Mitigation)
13: Tustin Ave & Annie's Salon/North Dwy

AM Peak
HCM 2010 TWSC

Intersection												
Int Delay, s/veh	0.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	20	0	0	55	2	625	20	39	2608	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	21	0	0	59	2	665	21	41	2774	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3133	3553	1393	2150	3548	343	2785	0	0	686	0	0
Stage 1	2863	2863	-	680	680	-	-	-	-	-	-	-
Stage 2	270	690	-	1470	2868	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	7	6	131	37	6	557	138	-	-	553	-	-
Stage 1	17	36	-	340	449	-	-	-	-	-	-	-
Stage 2	677	444	-	131	36	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	6	5	131	29	5	557	138	-	-	553	-	-
Mov Cap-2 Maneuver	6	5	-	29	5	-	-	-	-	-	-	-
Stage 1	17	33	-	335	442	-	-	-	-	-	-	-
Stage 2	597	438	-	102	33	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	37.7	12.2	0.1	0.2
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	138	-	-	131	557	553	-	-
HCM Lane V/C Ratio	0.015	-	-	0.162	0.105	0.075	-	-
HCM Control Delay (s)	31.5	-	-	37.7	12.2	12	-	-
HCM Lane LOS	D	-	-	E	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.4	0.2	-	-

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	40	0	0	50	2	604	39	0	2588	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	53	2	643	41	0	2753	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3098	3460	1395	1769	3458	342	2790	0	0	684	0	0
Stage 1	2772	2772	-	668	668	-	-	-	-	-	-	-
Stage 2	326	688	-	1101	2790	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	8	7	112	68	7	654	49	-	-	905	-	-
Stage 1	10	41	-	402	455	-	-	-	-	-	-	-
Stage 2	638	445	-	208	40	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	7	7	112	40	7	654	49	-	-	905	-	-
Mov Cap-2 Maneuver	8	35	-	100	33	-	-	-	-	-	-	-
Stage 1	9	41	-	375	425	-	-	-	-	-	-	-
Stage 2	547	416	-	129	40	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	55.6	11	2.8	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	49	-	-	112	654	905	-	-
HCM Lane V/C Ratio	0.043	-	-	0.38	0.081	-	-	-
HCM Control Delay (s)	81.8	2.7	-	55.6	11	0	-	-
HCM Lane LOS	F	A	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	0.3	0	-	-

Intersection												
Int Delay, s/veh	0.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	40	0	0	50	0	604	39	0	2588	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	53	0	643	41	0	2753	37

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3029	3456	1395	1764	3453	342	2790	0	0	684	0	0
Stage 1	2772	2772	-	663	663	-	-	-	-	-	-	-
Stage 2	257	684	-	1101	2790	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	14	7	112	89	7	558	49	-	-	554	-	-
Stage 1	10	41	-	340	457	-	-	-	-	-	-	-
Stage 2	665	447	-	203	40	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	13	7	112	55	7	558	49	-	-	554	-	-
Mov Cap-2 Maneuver	9	35	-	102	34	-	-	-	-	-	-	-
Stage 1	10	41	-	340	457	-	-	-	-	-	-	-
Stage 2	602	447	-	126	40	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	55.6	12.1	0	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	49	-	-	112	558	554	-	-
HCM Lane V/C Ratio	-	-	-	0.38	0.095	-	-	-
HCM Control Delay (s)	0	-	-	55.6	12.1	0	-	-
HCM Lane LOS	A	-	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	0.3	0	-	-

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	19	33	40	25	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	36	43	27	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	142	27	27	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	115	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	851	1048	1587	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	831	1048	1587	-	-	-
Mov Cap-2 Maneuver	831	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	889	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1587	-	1048	-	-
HCM Lane V/C Ratio	0.023	-	0.02	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	42.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	30	5	0	60	37	579	15	40	3000	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	0	31	5	0	61	38	591	15	41	3061	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3529	3840	1546	1980	3847	303	3092	0	0	606	0	0
Stage 1	3158	3158	-	674	674	-	-	-	-	-	-	-
Stage 2	371	682	-	1306	3173	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 4	4	88	49	4	693	~ 34	-	-	968	-	-
Stage 1	~ 5	25	-	399	452	-	-	-	-	-	-	-
Stage 2	600	448	-	154	25	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 4	4	88	31	4	693	~ 34	-	-	968	-	-
Mov Cap-2 Maneuver	~ 4	4	-	31	4	-	-	-	-	-	-	-
Stage 1	~ 5	24	-	399	452	-	-	-	-	-	-	-
Stage 2	547	448	-	96	24	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 2912.9	23.3	21.5	0.1
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	~ 34	-	-	9	262	968	-	-
HCM Lane V/C Ratio	1.11	-	-	5.669	0.253	0.042	-	-
HCM Control Delay (s)	\$ 367.1	-	-	\$ 2912.9	23.3	8.9	-	-
HCM Lane LOS	F	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	4	-	-	7.7	1	0.1	-	-

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

Intersection												
Int Delay, s/veh	3.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	50	0	0	65	46	588	15	40	3009	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	51	0	0	66	47	600	15	41	3070	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3561	3876	1551	2012	3885	308	3101	0	0	615	0	0
Stage 1	3167	3167	-	702	702	-	-	-	-	-	-	-
Stage 2	394	709	-	1310	3183	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	5.7	6.99	6.54	6.94	4.9	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.5	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	4	3	171	46	3	688	49	-	-	961	-	-
Stage 1	5	25	-	384	439	-	-	-	-	-	-	-
Stage 2	582	435	-	153	24	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	0	0	171	4	0	688	49	-	-	961	-	-
Mov Cap-2 Maneuver	0	0	-	4	0	-	-	-	-	-	-	-
Stage 1	0	24	-	16	18	-	-	-	-	-	-	-
Stage 2	21	18	-	103	23	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.8	10.8	17.5	0.1
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	49	-	-	171	688	961	-	-
HCM Lane V/C Ratio	0.958	-	-	0.298	0.096	0.042	-	-
HCM Control Delay (s)	247.2	-	-	34.8	10.8	8.9	-	-
HCM Lane LOS	F	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	4.1	-	-	1.2	0.3	0.1	-	-

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	2	1	0	1	1	0	1

Volume Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Base Vol:	210	1730	140	190	990	100	160	200	140	80	250	160
Growth 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
Initial Bse:	210	1730	140	190	990	100	160	200	140	80	250	160
Added Vol:	27	11	11	0	12	0	0	0	12	12	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	237	1741	151	190	1002	100	160	200	152	92	250	160
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	244	1795	156	196	1033	103	165	206	157	95	258	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	244	1795	156	196	1033	103	165	206	157	95	258	165
PCE 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
MLF 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
FinalVolume:	244	1795	156	196	1033	103	165	206	157	95	258	165

Saturation Flow Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.76	0.24	2.00	2.73	0.27	1.00	1.14	0.86	1.00	1.22	0.78
Final Sat.:	1600	4693	407	3200	4637	463	1600	1932	1468	1600	2073	1327

Capacity Analysis Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Vol/Sat:	0.15	0.38	0.38	0.06	0.22	0.22	0.10	0.11	0.11	0.06	0.12	0.12
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Buildout Year 2035 Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	0	1	0	1	1	0	1

Volume Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Base Vol:	210	1730	140	190	990	100	160	200	140	80	250	160
Growth 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
Initial Bse:	210	1730	140	190	990	100	160	200	140	80	250	160
Added Vol:	27	11	11	0	12	0	0	0	12	12	0	0
PasserByVol:	11	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	248	1741	151	190	1002	100	160	200	152	92	250	160
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	256	1795	156	196	1033	103	165	206	157	95	258	165
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	256	1795	156	196	1033	103	165	206	157	95	258	165
PCE 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
MLF 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
FinalVolume:	256	1795	156	196	1033	103	165	206	157	95	258	165

Saturation Flow Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	2.00	2.76	0.24	2.00	2.73	0.27	1.00	1.14	0.86	1.00	1.22	0.78
Final Sat.:	3200	4693	407	3200	4637	463	1600	1932	1468	1600	2073	1327

Capacity Analysis Module:	Tustin Ave NB			Tustin Ave SB			Santa Clara Ave EB			Santa Clara Ave WB		
Vol/Sat:	0.08	0.38	0.38	0.06	0.22	0.22	0.10	0.11	0.11	0.06	0.12	0.12
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 1.048
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: F

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	2	1	0	2	3	0	1	2

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	350	1310	650	500	490	60	460	1030	150	320	1110	410
Growth 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
Initial Bse:	350	1310	650	500	490	60	460	1030	150	320	1110	410
Added Vol:	0	12	0	49	11	0	18	0	0	0	16	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	350	1322	650	549	501	60	478	1030	150	320	1126	433
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	376	1418	697	589	538	64	513	1105	161	343	1208	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	376	1418	697	589	538	64	513	1105	161	343	1208	465
PCE 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
MLF 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
FinalVolume:	376	1418	697	589	538	64	513	1105	161	343	1208	465
OvlAdjVol:	488									105		

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.68	0.32	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4555	545	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.12	0.42	0.36	0.18	0.12	0.12	0.16	0.22	0.09	0.11	0.24	0.24
OvlAdjV/S:	0.25									0.05		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Buildout Year 2035 Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.909
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: E

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	0	2	0	3	0	1	0

Volume Module:

Base Vol:	350	1310	650	500	490	60	460	1030	150	320	1110	410
Growth 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
Initial Bse:	350	1310	650	500	490	60	460	1030	150	320	1110	410
Added Vol:	0	12	0	49	11	0	18	0	0	0	16	23
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	350	1322	650	549	501	60	478	1030	150	320	1126	433
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	376	1418	697	589	538	64	513	1105	161	343	1208	465
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	376	1418	697	589	538	64	513	1105	161	343	1208	465
PCE 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
MLF 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
FinalVolume:	376	1418	697	589	538	64	513	1105	161	343	1208	465
OvlAdjVol:	488									105		

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	3.00	1.00	2.00	2.68	0.32	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1955	3200	4555	545	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.12	0.28	0.36	0.18	0.12	0.12	0.16	0.22	0.09	0.11	0.24	0.24
OvlAdjV/S:	0.25									0.05		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.653
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	100	1750	80	110	660	120	70	5	70	60	20	240
Growth 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
Initial Bse:	100	1750	80	110	660	120	70	5	70	60	20	240
Added Vol:	0	12	0	0	11	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	100	1762	80	110	671	120	70	5	70	60	20	240
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	107	1891	86	118	720	129	75	5	75	64	21	258
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	1891	86	118	720	129	75	5	75	64	21	258
PCE 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
MLF 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
FinalVolume:	107	1891	86	118	720	129	75	5	75	64	21	258

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.54	0.46	0.93	0.07	1.00	0.75	0.25	1.00
Final Sat.:	1600	5100	1700	3200	4326	774	1587	113	1700	1275	425	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.07	0.37	0.05	0.04	0.17	0.17	0.04	0.05	0.04	0.04	0.05	0.15
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.684
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name: Sherry Ln - Cabrillo Park Ave						17th St							
Approach: North Bound			South Bound			East Bound			West Bound				
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted			Permitted			Protected			Protected			
Rights:	Include			Include			Include			Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lanes:	1	0	1	0	1	0	1	0	1	0	2	1	0

Volume Module:

Base Vol:	310	140	160	140	70	50	50	1110	115	145	1350	70
Growth 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
Initial Bse:	310	140	160	140	70	50	50	1110	115	145	1350	70
Added Vol:	0	0	6	0	0	0	0	12	0	5	11	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	310	140	166	140	70	50	50	1122	115	150	1361	70
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	327	148	175	148	74	53	53	1184	121	158	1436	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	327	148	175	148	74	53	53	1184	121	158	1436	74
PCE 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
MLF 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
FinalVolume:	327	148	175	148	74	53	53	1184	121	158	1436	74

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.58	0.42	1.00	2.72	0.28	1.00	2.85	0.15
Final Sat.:	1600	1700	1700	1600	992	708	1600	4626	474	1600	4851	249

Capacity Analysis Module:

Vol/Sat:	0.20	0.09	0.10	0.09	0.07	0.07	0.03	0.26	0.26	0.10	0.30	0.30
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: C[16.5]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	2	1	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	15		0	0	40		0	1970	230		0	1780	80	
Growth 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	
Initial Bse:	0	0	15		0	0	40		0	1970	230		0	1780	80	
Added Vol:	0	0	0		0	0	16		0	49	0		0	23	29	
PasserByVol:	0	0	0		0	0	7		0	0	0		0	0	13	
Initial Fut:	0	0	15		0	0	63		0	2019	230		0	1803	122	
User 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	
PHF Adj:	0.93	0.93	0.93		0.93	0.93	0.93		0.93	0.93	0.93		0.93	0.93	0.93	
PHF Volume:	0	0	16		0	0	68		0	2166	247		0	1935	131	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	16		0	0	68		0	2166	247		0	1935	131	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	665	xxxx	xxxx	710	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	407	xxxx	xxxx	380	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	407	xxxx	xxxx	380	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.04	xxxx	xxxx	0.18	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.6	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	14.2	xxxxx	xxxx	16.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	B	*	*	C	*	*	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	14.2				16.5				xxxxxxx				xxxxxxx			
ApproachLOS:	B				C				*				*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.646
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	15	45	15	50	1290	620	440	1770	70
Growth 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
Initial Bse:	0	0	0	15	45	15	50	1290	620	440	1770	70
Added Vol:	0	0	0	0	0	0	0	32	16	0	53	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	15	45	15	50	1322	636	440	1823	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.00	0.96	0.96	0.96
PHF Volume:	0	0	0	16	47	16	52	1383	0	460	1907	73
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	16	47	16	52	1383	0	460	1907	73
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	16	47	16	52	1383	0	460	1907	73

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.75	0.25	1.00	3.00	1.00	1.00	2.89	0.11
Final Sat.:	0	0	0	1600	1275	425	1600	5100	1955	1600	4911	189

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.01	0.04	0.04	0.03	0.27	0.00	0.29	0.39	0.39
Crit Moves:				****			****			****		

Buildout 2035 with Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

PM Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	1322	636	440	1823	70	0	0	0	15	45	15
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	52	1377	0	458	1899	73				16	47	16
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	62	2021	724	507	3258	125				88	66	22
Arrive On Green	0.04	0.44	0.00	0.32	0.72	0.72				0.06	0.06	0.06
Sat Flow, veh/h	1587	4550	1629	1587	4497	173				1587	1190	405
Grp Volume(v), veh/h	52	1377	0	458	1280	692				16	0	63
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1636				1587	0	1595
Q Serve(g_s), s	2.4	18.0	0.0	20.6	15.0	15.1				0.7	0.0	2.9
Cycle Q Clear(g_c), s	2.4	18.0	0.0	20.6	15.0	15.1				0.7	0.0	2.9
Prop In Lane	1.00		1.00	1.00		0.11				1.00		0.25
Lane Grp Cap(c), veh/h	62	2021	724	507	2197	1185				88	0	88
V/C Ratio(X)	0.83	0.68	0.00	0.90	0.58	0.58				0.18	0.00	0.71
Avail Cap(c_a), veh/h	160	2021	724	777	2502	1349				373	0	374
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	35.6	16.5	0.0	24.3	4.9	4.9				33.6	0.0	34.6
Incr Delay (d2), s/veh	23.7	0.9	0.0	9.7	0.3	0.5				1.0	0.0	10.2
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	1.5	7.7	0.0	10.3	6.1	6.7				0.3	0.0	1.5
LnGrp Delay(d),s/veh	59.3	17.5	0.0	33.9	5.2	5.4				34.6	0.0	44.9
LnGrp LOS	E	B		C	A	A				C		D
Approach Vol, veh/h		1429			2430						79	
Approach Delay, s/veh		19.0			10.7						42.8	
Approach LOS		B			B						D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			28.3	37.6		8.6	7.4	58.5				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			36.5	32.5		17.5	7.5	61.5				
Max Q Clear Time (g_c+I1), s			22.6	20.0		4.9	4.4	17.1				
Green Ext Time (p_c), s			1.2	11.8		0.2	0.0	37.0				
Intersection Summary												
HCM 2010 Ctrl Delay			14.3									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	840		0	0	580		0	1300	0		0	1700	0	
Growth 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	
Initial Bse:	0	0	840		0	0	580		0	1300	0		0	1700	0	
Added Vol:	0	0	0		0	0	18		0	32	0		0	35	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	840		0	0	598		0	1332	0		0	1735	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.93	0.93	0.00		0.93	0.93	0.00		0.93	0.93	0.93		0.93	0.93	0.93	
PHF Volume:	0	0	0		0	0	0		0	1434	0		0	1868	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1434	0		0	1868	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	478	xxxx	xxxx	934	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	539	xxxx	xxxx	271	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	539	xxxx	xxxx	271	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			
ApproachLOS:	*			*			*			*			*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	3	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	1610	530	0	1700	910
Growth 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
Initial Bse:	0	0	0	0	0	0	0	1610	530	0	1700	910
Added Vol:	0	0	0	0	0	0	0	16	16	0	35	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	1626	546	0	1735	910
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.00	0.95	0.95	0.00
PHF Volume:	0	0	0	0	0	0	0	1708	0	0	1822	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	1708	0	0	1822	0

Critical Gap Module:	North Bound			South Bound			East Bound			West Bound		
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:	North Bound			South Bound			East Bound			West Bound		
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:	North Bound			South Bound			East Bound			West Bound		
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shrd ConDel:	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.815
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: D

Street Name:	Mimi's Café - SR55 NB Ramps 17th St											
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	440	30	220	5	0	110	70	1540	0	0	2090	40
Growth 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
Initial Bse:	440	30	220	5	0	110	70	1540	0	0	2090	40
Added Vol:	18	0	0	0	0	0	0	16	0	0	18	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	458	30	220	5	0	110	70	1556	0	0	2108	40
User 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
PHF Adj:	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
PHF Volume:	485	32	233	5	0	117	74	1648	0	0	2233	42
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	485	32	233	5	0	117	74	1648	0	0	2233	42
PCE 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
MLF 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
FinalVolume:	485	32	233	5	0	117	74	1648	0	0	2233	42

Saturation Flow Module:





















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.94	0.06	1.00	0.04	0.00	0.96	1.00	3.00	0.00	0.00	3.93	0.07
Final Sat.:	3299	101	1700	74	0	1626	1700	5100	0	0	6673	127

Capacity Analysis Module:

Vol/Sat:	0.15	0.32	0.14	0.07	0.00	0.07	0.04	0.32	0.00	0.00	0.33	0.33
Crit Moves:	****			****			****			****		

Buildout 2035 with Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

PM Peak
HCM Signalized Intersection Capacity Analysis

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1556	0	0	2108	40	458	30	220	5	0	110
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.99	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (prot)	1583	4550			5717		1504	1440	1346		1448	
Flt Permitted	0.95	1.00			1.00		0.95	0.96	1.00		1.00	
Satd. Flow (perm)	1583	4550			5717		1504	1440	1346		1448	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	1655	0	0	2243	43	487	32	234	5	0	117
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	151	0	108	0
Lane Group Flow (vph)	74	1655	0	0	2284	0	273	266	60	0	14	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	5.0	49.7			40.2		19.1	19.1	19.1		7.2	
Effective Green, g (s)	5.0	49.7			40.2		19.1	19.1	19.1		7.2	
Actuated g/C Ratio	0.06	0.56			0.45		0.21	0.21	0.21		0.08	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	88	2526			2567		320	307	287		116	
v/s Ratio Prot	0.05	c0.36			c0.40		0.18	c0.18			c0.01	
v/s Ratio Perm									0.04			
v/c Ratio	0.84	0.66			0.89		0.85	0.87	0.21		0.12	
Uniform Delay, d1	41.9	13.9			22.6		33.9	34.0	29.0		38.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	48.1	0.6			4.2		19.2	21.6	0.4		0.5	
Delay (s)	90.0	14.5			26.8		53.1	55.6	29.3		38.7	
Level of Service	F	B			C		D	E	C		D	
Approach Delay (s)		17.8			26.8			47.3			38.7	
Approach LOS		B			C			D			D	

Intersection Summary

HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	89.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:

Base Vol:	360	90	100	110	30	150	140	1420	210	50	1630	35
Growth 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
Initial Bse:	360	90	100	110	30	150	140	1420	210	50	1630	35
Added Vol:	6	0	0	0	0	0	0	11	5	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	366	90	100	110	30	150	140	1431	215	50	1642	35
User 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
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
PHF Volume:	393	97	107	118	32	161	150	1537	231	54	1764	38
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	393	97	107	118	32	161	150	1537	231	54	1764	38
PCE 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
MLF 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
FinalVolume:	393	97	107	118	32	161	150	1537	231	54	1764	38

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.94	0.06
Final Sat.:	3400	1700	1700	1700	283	1417	1700	5100	1700	1700	4994	106

Capacity Analysis Module:

Vol/Sat:	0.12	0.06	0.06	0.07	0.11	0.11	0.09	0.30	0.14	0.03	0.35	0.35
Crit Moves:	****				****		****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.709
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: C

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	90	180	40	140	90	210	210	1330	50	60	1440	230
Growth 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
Initial Bse:	90	180	40	140	90	210	210	1330	50	60	1440	230
Added Vol:	0	0	0	0	0	0	0	11	0	0	12	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	90	180	40	140	90	210	210	1341	50	60	1452	230
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	92	185	41	144	92	216	216	1377	51	62	1491	236
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	92	185	41	144	92	216	216	1377	51	62	1491	236
PCE 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
MLF 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
FinalVolume:	92	185	41	144	92	216	216	1377	51	62	1491	236

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.89	0.11	1.00	2.59	0.41
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4917	183	1700	4403	697

Capacity Analysis Module:

Vol/Sat:	0.05	0.11	0.02	0.08	0.05	0.13	0.13	0.28	0.28	0.04	0.34	0.34
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.310
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	0	1	0	0	1	0

Volume Module:

Base Vol:	5	370	130	30	190	5	5	5	0	70	0	130
Growth 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
Initial Bse:	5	370	130	30	190	5	5	5	0	70	0	130
Added Vol:	0	6	0	0	5	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	5	376	130	30	195	5	5	5	0	70	0	130
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	5	397	137	32	206	5	5	5	0	74	0	137
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	5	397	137	32	206	5	5	5	0	74	0	137
PCE 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
MLF 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
FinalVolume:	5	397	137	32	206	5	5	5	0	74	0	137

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.49	0.51	1.00	1.95	0.05	0.50	0.50	0.00	1.00	0.00	1.00
Final Sat.:	1700	2526	874	1700	3315	85	850	850	0	1700	0	1700

Capacity Analysis Module:

Vol/Sat:	0.00	0.16	0.16	0.02	0.06	0.06	0.00	0.01	0.00	0.04	0.00	0.08
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	86.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	10	31	0	39	10	2183	26	50	1038	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	11	33	0	42	11	2347	28	54	1116	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2421	3623	561	3049	3612	1188	1122	0	0	2375	0	0
Stage 1	1226	1226	-	2383	2383	-	-	-	-	-	-	-
Stage 2	1195	2397	-	666	1229	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	17	5	471	~ 5	5	181	618	-	-	201	-	-
Stage 1	189	249	-	35	65	-	-	-	-	-	-	-
Stage 2	198	64	-	415	248	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	10	4	471	~ 4	4	181	618	-	-	201	-	-
Mov Cap-2 Maneuver	10	4	-	~ 4	4	-	-	-	-	-	-	-
Stage 1	186	182	-	34	64	-	-	-	-	-	-	-
Stage 2	149	63	-	297	181	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	231.9	\$ 4123.3	0	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	618	-	-	29	9	201	-	-
HCM Lane V/C Ratio	0.017	-	-	0.556	8.363	0.267	-	-
HCM Control Delay (s)	10.9	-	-	231.9	\$ 4123.3	29.3	-	-
HCM Lane LOS	B	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	10.9	1	-	-

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

Buildout 2035 with Project (with Mitigation)
 13: Tustin Ave & Annie's Salon/North Dwy

PM Peak
 HCM 2010 TWSC

Intersection												
Int Delay, s/veh	2.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	15	0	0	70	10	2183	26	50	1059	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	0	0	75	11	2347	28	54	1139	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2209	3646	572	3060	3635	1188	1144	0	0	2375	0	0
Stage 1	1249	1249	-	2383	2383	-	-	-	-	-	-	-
Stage 2	960	2397	-	677	1252	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	6.5	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.8	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	34	5	463	8	5	195	606	-	-	80	-	-
Stage 1	179	243	-	20	65	-	-	-	-	-	-	-
Stage 2	255	64	-	397	242	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	9	2	463	3	2	195	606	-	-	80	-	-
Mov Cap-2 Maneuver	9	2	-	3	2	-	-	-	-	-	-	-
Stage 1	176	79	-	20	64	-	-	-	-	-	-	-
Stage 2	154	63	-	125	79	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	34.6	0	5.1
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	606	-	-	463	195	80	-	-
HCM Lane V/C Ratio	0.018	-	-	0.035	0.386	0.672	-	-
HCM Control Delay (s)	11	-	-	13.1	34.6	114.2	-	-
HCM Lane LOS	B	-	-	B	D	F	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	1.7	3.1	-	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	50	0	0	61	10	2148	50	0	1029	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	54	0	0	66	11	2310	54	0	1106	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2304	3513	575	2801	3507	1182	1149	0	0	2363	0	0
Stage 1	1128	1128	-	2358	2358	-	-	-	-	-	-	-
Stage 2	1176	2385	-	443	1149	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	29	6	395	13	6	182	331	-	-	203	-	-
Stage 1	166	278	-	36	67	-	-	-	-	-	-	-
Stage 2	199	65	-	532	271	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	~ 19	6	395	11	6	182	331	-	-	203	-	-
Mov Cap-2 Maneuver	74	50	-	32	50	-	-	-	-	-	-	-
Stage 1	166	278	-	36	67	-	-	-	-	-	-	-
Stage 2	127	65	-	460	271	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	35.5	0.1	0
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	331	-	-	395	182	203	-	-
HCM Lane V/C Ratio	0.032	-	-	0.136	0.36	-	-	-
HCM Control Delay (s)	16.2	0	-	15.5	35.5	0	-	-
HCM Lane LOS	C	A	-	C	E	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1.5	0	-	-

Notes

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

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	70	0	0	61	0	2148	50	0	1029	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	75	0	0	66	0	2310	54	0	1106	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2052	3491	575	2780	3486	1182	1149	0	0	2363	0	0
Stage 1	1128	1128	-	2337	2337	-	-	-	-	-	-	-
Stage 2	924	2363	-	443	1149	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	6.7	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.7	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	59	6	395	20	6	186	331	-	-	82	-	-
Stage 1	162	278	-	22	69	-	-	-	-	-	-	-
Stage 2	262	67	-	515	271	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	38	6	395	16	6	186	331	-	-	82	-	-
Mov Cap-2 Maneuver	93	51	-	20	52	-	-	-	-	-	-	-
Stage 1	162	278	-	22	69	-	-	-	-	-	-	-
Stage 2	170	67	-	417	271	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.2	34.5	0	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	331	-	-	395	186	82	-	-
HCM Lane V/C Ratio	-	-	-	0.191	0.353	-	-	-
HCM Control Delay (s)	0	-	-	16.2	34.5	0	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1.5	0	-	-

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	23	42	80	40	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	46	87	43	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	221	43	43 0
Stage 1	43	-	- -
Stage 2	178	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	767	1027	1566 -
Stage 1	979	-	- -
Stage 2	853	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	743	1027	1566 -
Mov Cap-2 Maneuver	743	-	- -
Stage 1	979	-	- -
Stage 2	827	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1566	-	1027	-	-
HCM Lane V/C Ratio	0.029	-	0.024	-	-
HCM Control Delay (s)	7.4	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	33.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	0	25	5	5	60	72	2179	25	45	1081	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	0	26	5	5	62	75	2270	26	47	1126	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2534	3692	589	2977	3705	1148	1178	0	0	2296	0	0
Stage 1	1246	1246	-	2433	2433	-	-	-	-	-	-	-
Stage 2	1288	2446	-	544	1272	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	~ 20	5	387	10	~ 4	192	321	-	-	216	-	-
Stage 1	137	244	-	32	62	-	-	-	-	-	-	-
Stage 2	170	61	-	462	237	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	3	387	6	~ 2	192	321	-	-	216	-	-
Mov Cap-2 Maneuver	-	3	-	6	~ 2	-	-	-	-	-	-	-
Stage 1	105	191	-	25	48	-	-	-	-	-	-	-
Stage 2	78	47	-	337	185	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		\$ 1690.2	0.6	1
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	321	-	-	- 19	216	-	-
HCM Lane V/C Ratio	0.234	-	-	- 3.838	0.217	-	-
HCM Control Delay (s)	19.6	-	-	\$ 1690.2	26.2	-	-
HCM Lane LOS	C	-	-	- F	D	-	-
HCM 95th %tile Q(veh)	0.9	-	-	- 9.6	0.8	-	-

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

Intersection												
Int Delay, s/veh	1.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	50	0	0	70	82	2189	25	45	1092	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	52	0	0	73	85	2280	26	47	1138	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2568	3734	595	3013	3747	1153	1190	0	0	2306	0	0
Stage 1	1257	1257	-	2464	2464	-	-	-	-	-	-	-
Stage 2	1311	2477	-	549	1283	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.2	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	19	4	383	9	4	195	317	-	-	214	-	-
Stage 1	134	241	-	31	59	-	-	-	-	-	-	-
Stage 2	164	58	-	458	234	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	8	2	383	5	2	195	317	-	-	214	-	-
Mov Cap-2 Maneuver	8	2	-	5	2	-	-	-	-	-	-	-
Stage 1	98	188	-	23	43	-	-	-	-	-	-	-
Stage 2	75	42	-	309	183	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	34.1	0.7	1
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	317	-	-	383	195	214	-	-
HCM Lane V/C Ratio	0.269	-	-	0.136	0.374	0.219	-	-
HCM Control Delay (s)	20.5	-	-	15.9	34.1	26.5	-	-
HCM Lane LOS	C	-	-	C	D	D	-	-
HCM 95th %tile Q(veh)	1.1	-	-	0.5	1.6	0.8	-	-

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.566
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	152	818	112	139	988	102	154	141	157	81	126	123
Growth 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
Initial Bse:	152	818	112	139	988	102	154	141	157	81	126	123
Added Vol:	50	20	20	0	21	0	0	0	21	21	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	202	838	132	139	1009	102	154	141	178	102	126	123
User 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
PHF 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
PHF Volume:	203	842	133	140	1014	103	155	142	179	103	127	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	203	842	133	140	1014	103	155	142	179	103	127	124
PCE 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
MLF 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
FinalVolume:	203	842	133	140	1014	103	155	142	179	103	127	124

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.59	0.41	2.00	2.72	0.28	1.00	1.00	1.00	1.00	1.01	0.99
Final Sat.:	1600	4406	694	3200	4632	468	1600	1700	1700	1600	1720	1680

Capacity Analysis Module:

Vol/Sat:	0.13	0.19	0.19	0.04	0.22	0.22	0.10	0.08	0.11	0.06	0.07	0.07
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Buildout Year 2035 Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Tustin Ave @ Santa Clara Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.509
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Santa Clara Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	1	0	0	1	0	1	1	0	1

Volume Module:

Base Vol:	152	818	112	139	988	102	154	141	157	81	126	123
Growth 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
Initial Bse:	152	818	112	139	988	102	154	141	157	81	126	123
Added Vol:	50	20	20	0	21	0	0	0	21	21	0	0
PasserByVol:	20	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	222	838	132	139	1009	102	154	141	178	102	126	123
User 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
PHF 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
PHF Volume:	223	842	133	140	1014	103	155	142	179	103	127	124
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	223	842	133	140	1014	103	155	142	179	103	127	124
PCE 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
MLF 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
FinalVolume:	223	842	133	140	1014	103	155	142	179	103	127	124

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	2.00	2.59	0.41	2.00	2.72	0.28	1.00	1.00	1.00	1.00	1.01	0.99
Final Sat.:	3200	4406	694	3200	4632	468	1600	1700	1700	1600	1720	1680

Capacity Analysis Module:

Vol/Sat:	0.07	0.19	0.19	0.04	0.22	0.22	0.10	0.08	0.11	0.06	0.07	0.07
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.666
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	2	0	1	0	2	0	3	0	1	2

Volume Module:

Base Vol:	193	302	186	535	367	70	470	889	137	275	755	407
Growth 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
Initial Bse:	193	302	186	535	367	70	470	889	137	275	755	407
Added Vol:	0	21	0	90	20	0	31	0	0	0	30	41
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	193	323	186	625	387	70	501	889	137	275	785	448
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	198	331	191	641	397	72	514	912	141	282	805	459
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	331	191	641	397	72	514	912	141	282	805	459
PCE 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
MLF 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
FinalVolume:	198	331	191	641	397	72	514	912	141	282	805	459
OvlAdjVol:	18									68		

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	2.00	1.00	2.00	2.54	0.46	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	3400	1955	3200	4319	781	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.06	0.10	0.10	0.20	0.09	0.09	0.16	0.18	0.08	0.09	0.16	0.24
OvlAdjV/S:	0.01									0.03		
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Buildout Year 2035 Mitigation

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Tustin Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Tustin Ave						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	3	0	1	0	2	0	3	0	1	0

Volume Module:

Base Vol:	193	302	186	535	367	70	470	889	137	275	755	407
Growth 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
Initial Bse:	193	302	186	535	367	70	470	889	137	275	755	407
Added Vol:	0	21	0	90	20	0	31	0	0	0	30	41
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	193	323	186	625	387	70	501	889	137	275	785	448
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	198	331	191	641	397	72	514	912	141	282	805	459
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	198	331	191	641	397	72	514	912	141	282	805	459
PCE 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
MLF 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
FinalVolume:	198	331	191	641	397	72	514	912	141	282	805	459
OvlAdjVol:			18									68

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.15	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15
Lanes:	2.00	3.00	1.00	2.00	2.54	0.46	2.00	3.00	1.00	2.00	3.00	1.00
Final Sat.:	3200	5100	1955	3200	4319	781	3200	5100	1700	3200	5100	1955

Capacity Analysis Module:

Vol/Sat:	0.06	0.06	0.10	0.20	0.09	0.09	0.16	0.18	0.08	0.09	0.16	0.24
OvlAdjV/S:			0.01									0.03
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Tustin Ave @ Tustin Centre

Cycle (sec): 100 Critical Vol./Cap.(X): 0.327
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Tustin Ave						Tustin Centre					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	3	0	1	0	0	1	0	0	1	0

Volume Module:	North Bound			South Bound			East Bound			West Bound		
Base Vol:	91	513	28	108	514	148	59	5	73	16	15	66
Growth 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
Initial Bse:	91	513	28	108	514	148	59	5	73	16	15	66
Added Vol:	0	21	0	0	20	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	91	534	28	108	534	148	59	5	73	16	15	66
User 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
PHF Adj:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	96	561	29	113	561	155	62	5	77	17	16	69
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	561	29	113	561	155	62	5	77	17	16	69
PCE 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
MLF 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
FinalVolume:	96	561	29	113	561	155	62	5	77	17	16	69

Saturation Flow Module:	North Bound			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	3.00	1.00	2.00	2.35	0.65	0.92	0.08	1.00	0.52	0.48	1.00
Final Sat.:	1600	5100	1700	3200	3993	1107	1567	133	1700	877	823	1700

Capacity Analysis Module:	North Bound			South Bound			East Bound			West Bound		
Vol/Sat:	0.06	0.11	0.02	0.04	0.14	0.14	0.04	0.04	0.05	0.01	0.02	0.04
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Sherry Ln - Cabrillo Park Ave @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.577
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:		17th St														
Approach:		North Bound			South Bound			East Bound			West Bound					
Movement:		L	T	R	L	T	R	L	T	R	L	T	R			
Control:		Permitted			Permitted			Protected			Protected					
Rights:		Include			Include			Include			Include					
Min. Green:		0	0	0	0	0	0	0	0	0	0	0	0			
Y+R:		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0			
Lanes:		1	0	1	0	1	1	0	2	1	0	1	0	2	1	0

Volume Module:

Base Vol:	175	60	99	126	77	73	61	1065	97	122	1014	86
Growth 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
Initial Bse:	175	60	99	126	77	73	61	1065	97	122	1014	86
Added Vol:	0	0	10	0	0	0	0	21	0	10	20	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	175	60	109	126	77	73	61	1086	97	132	1034	86
User 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
PHF Adj:	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
PHF Volume:	180	62	112	130	79	75	63	1117	100	136	1064	88
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	62	112	130	79	75	63	1117	100	136	1064	88
PCE 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
MLF 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
FinalVolume:	180	62	112	130	79	75	63	1117	100	136	1064	88

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	0.51	0.49	1.00	2.75	0.25	1.00	2.77	0.23
Final Sat.:	1600	1700	1700	1600	873	827	1600	4682	418	1600	4708	392

Capacity Analysis Module:

Vol/Sat:	0.11	0.04	0.07	0.08	0.09	0.09	0.04	0.24	0.24	0.08	0.23	0.23
Crit Moves:	****			****			****			****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Ponderosa St @ 17th St

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[14.5]

Street Name: Ponderosa St 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled					
Rights:	Include				Include				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	1	0	0	0	2	1	0

Volume Module:

Base Vol:	0	0	16	0	0	49	0	1563	79	0	1422	60
Growth 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
Initial Bse:	0	0	16	0	0	49	0	1563	79	0	1422	60
Added Vol:	0	0	0	0	0	30	0	90	0	0	41	52
PasserByVol:	0	0	0	0	0	13	0	0	0	0	0	22
Initial Fut:	0	0	16	0	0	92	0	1653	79	0	1463	134
User 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
PHF Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
PHF Volume:	0	0	16	0	0	94	0	1683	80	0	1490	136
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	16	0	0	94	0	1683	80	0	1490	136

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	461	xxxx	xxxx	565	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	553	xxxx	xxxx	473	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	553	xxxx	xxxx	473	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.03	xxxx	xxxx	0.20	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	0.1	xxxx	xxxx	0.7	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	11.7	xxxxx	xxxx	14.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	B	*	*	B	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	11.7			14.5			xxxxxxx			xxxxxxx		
ApproachLOS:	B			B			*			*		

 Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #6 Deodar St - SR55 SB On-Ramp @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.700
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Deodar St - SR55 SB On-Ramp						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0	0	0	1	0	0	1	0	3	1	0	2

Volume Module:

Base Vol:	0	0	0	32	31	14	48	963	492	481	1518	52
Growth 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
Initial Bse:	0	0	0	32	31	14	48	963	492	481	1518	52
Added Vol:	0	0	0	0	0	0	0	60	30	0	93	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	32	31	14	48	1023	522	481	1611	52
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.00	0.81	0.81	0.81
PHF Volume:	0	0	0	39	38	17	59	1260	0	592	1984	64
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	39	38	17	59	1260	0	592	1984	64
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
FinalVolume:	0	0	0	39	38	17	59	1260	0	592	1984	64

Saturation Flow Module:






















Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	1.00	0.94	1.00	1.00	0.94	1.00	1.15	0.94	1.00	1.00
Lanes:	0.00	0.00	0.00	1.00	0.69	0.31	1.00	3.00	1.00	1.00	2.91	0.09
Final Sat.:	0	0	0	1600	1171	529	1600	5100	1955	1600	4941	159

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.02	0.03	0.03	0.04	0.25	0.00	0.37	0.40	0.40
Crit Moves:				****			****			****		

Buildout 2035 with Project
6: SR-55 SB On-Ramp/Deodar St & 17th St

MD Peak
HCM 2010 Signalized Intersection Summary

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	1023	522	481	1611	52	0	0	0	32	31	14
Number	7	4	14	3	8	18				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	1667	1667	1917	1667	1667	1700				1667	1667	1700
Adj Flow Rate, veh/h	59	1263	0	594	1989	64				40	38	17
Adj No. of Lanes	1	3	1	1	3	0				1	1	0
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81				0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	2	2	2				2	2	2
Cap, veh/h	72	1636	586	643	3259	105				88	60	27
Arrive On Green	0.05	0.36	0.00	0.41	0.72	0.72				0.06	0.06	0.06
Sat Flow, veh/h	1587	4550	1629	1587	4529	145				1587	1092	489
Grp Volume(v), veh/h	59	1263	0	594	1331	722				40	0	55
Grp Sat Flow(s),veh/h/ln	1587	1517	1629	1587	1517	1641				1587	0	1580
Q Serve(g_s), s	2.8	18.5	0.0	26.7	16.5	16.5				1.8	0.0	2.6
Cycle Q Clear(g_c), s	2.8	18.5	0.0	26.7	16.5	16.5				1.8	0.0	2.6
Prop In Lane	1.00		1.00	1.00		0.09				1.00		0.31
Lane Grp Cap(c), veh/h	72	1636	586	643	2183	1181				88	0	87
V/C Ratio(X)	0.82	0.77	0.00	0.92	0.61	0.61				0.46	0.00	0.63
Avail Cap(c_a), veh/h	169	1636	586	899	2465	1334				370	0	368
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	1.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	21.3	0.0	21.2	5.3	5.3				34.4	0.0	34.7
Incr Delay (d2), s/veh	20.1	2.3	0.0	11.8	0.4	0.7				3.7	0.0	7.3
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	1.6	8.1	0.0	13.7	6.8	7.4				0.9	0.0	1.3
LnGrp Delay(d),s/veh	55.7	23.7	0.0	33.0	5.6	5.9				38.0	0.0	42.0
LnGrp LOS	E	C		C	A	A				D		D
Approach Vol, veh/h		1322			2647							95
Approach Delay, s/veh		25.1			11.8							40.3
Approach LOS		C			B							D
Timer	1	2	3	4	5	6	7	8				
Assigned Phs			3	4		6	7	8				
Phs Duration (G+Y+Rc), s			34.9	31.5		8.6	7.9	58.5				
Change Period (Y+Rc), s			4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s			42.5	26.5		17.5	8.0	61.0				
Max Q Clear Time (g_c+I1), s			28.7	20.5		4.6	4.8	18.5				
Green Ext Time (p_c), s			1.7	5.8		0.3	0.0	35.5				
Intersection Summary												
HCM 2010 Ctrl Delay			16.8									
HCM 2010 LOS			B									

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 SR55 SB Off-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 SB Off-Ramp 17th St

Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	T	R		L	T	R		L	T	R		L	T	R			
Control:	Yield Sign				Yield Sign				Uncontrolled				Uncontrolled					
Rights:	Ignore				Ignore				Include				Include					
Lanes:	0	0	0	1	0	0	0	1	0	0	3	0	0	0	0	2	0	0

Volume Module:	North Bound				South Bound				East Bound				West Bound			
Base Vol:	0	0	693		0	0	457		0	996	0		0	1594	0	
Growth 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	
Initial Bse:	0	0	693		0	0	457		0	996	0		0	1594	0	
Added Vol:	0	0	0		0	0	31		0	60	0		0	62	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	693		0	0	488		0	1056	0		0	1656	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.94	0.94	0.00		0.94	0.94	0.00		0.94	0.94	0.94		0.94	0.94	0.94	
PHF Volume:	0	0	0		0	0	0		0	1129	0		0	1771	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
FinalVolume:	0	0	0		0	0	0		0	1129	0		0	1771	0	

Critical Gap Module:	North Bound				South Bound				East Bound				West Bound			
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	

Capacity Module:	North Bound				South Bound				East Bound				West Bound			
Cnflict Vol:	xxxx	xxxx	376	xxxx	xxxx	886	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	627	xxxx	xxxx	292	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	627	xxxx	xxxx	292	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.00	xxxx	xxxx	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	

Level Of Service Module:	North Bound				South Bound				East Bound				West Bound			
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx			
ApproachLOS:	*			*			*			*			*			

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 SR55 NB On-Ramp @ 17th St

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name: SR55 NB On-Ramp 17th St

Approach:	North Bound				South Bound				East Bound			West Bound		
Movement:	L	T	R		L	T	R		L	T	R	L	T	R
Control:	Stop Sign				Stop Sign				Uncontrolled			Uncontrolled		
Rights:	Include				Include				Ignore			Ignore		
Lanes:	0	0	0	0	0	0	0	0	0	0	3	0	0	3

Volume Module:	North Bound				South Bound				East Bound			West Bound		
Base Vol:	0	0	0	0	0	0	0	0	0	1310	393	0	1594	534
Growth 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	1.00	1.00
Initial Bse:	0	0	0	0	0	0	0	0	0	1310	393	0	1594	534
Added Vol:	0	0	0	0	0	0	0	0	0	30	30	0	62	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	0	0	0	0	0	0	1340	423	0	1656	534
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.00	0.93	0.93	0.00
PHF Volume:	0	0	0	0	0	0	0	0	0	1436	0	0	1775	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	0	0	0	0	0	0	0	0	1436	0	0	1775	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxxx			xxxxxxx			xxxxxxx			xxxxxxx		
ApproachLOS:	*			*			*			*		

Note: Queue reported is the number of cars per lane.

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #9 Mimi's Café - SR55 NB Ramps @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.643
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	17th St											
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	0	1	1	0	3	0	0	3

Volume Module:

Base Vol:	470	38	435	2	0	123	75	1254	0	0	1496	31
Growth 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
Initial Bse:	470	38	435	2	0	123	75	1254	0	0	1496	31
Added Vol:	31	0	0	0	0	0	0	30	0	0	31	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	501	38	435	2	0	123	75	1284	0	0	1527	31
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	552	42	480	2	0	136	83	1416	0	0	1684	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	552	42	480	2	0	136	83	1416	0	0	1684	34
PCE 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
MLF 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
FinalVolume:	552	42	480	2	0	136	83	1416	0	0	1684	34

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.54	0.12	1.34	0.01	0.01	0.98	1.00	3.00	0.00	0.00	3.92	0.08
Final Sat.:	2623	199	2278	27	0	1673	1700	5100	0	0	6665	135

Capacity Analysis Module:

Vol/Sat:	0.21	0.21	0.21	0.08	0.00	0.08	0.05	0.28	0.00	0.00	0.25	0.25
Crit Moves:	****			****			****			****		

Buildout 2035 with Project
9: SR-55 SB Ramps/Mimi's Cafe & 17th St

MD Peak
HCM Signalized Intersection Capacity Analysis

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	1284	0	0	1527	31	501	38	435	2	0	123
Ideal Flow (vphpl)	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Total Lost time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91			0.86		0.95	0.91	0.95		1.00	
Frt	1.00	1.00			1.00		1.00	0.94	0.85		0.87	
Flt Protected	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (prot)	1583	4550			5716		1504	1395	1346		1444	
Flt Permitted	0.95	1.00			1.00		0.95	0.98	1.00		1.00	
Satd. Flow (perm)	1583	4550			5716		1504	1395	1346		1444	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	82	1411	0	0	1678	34	551	42	478	2	0	135
RTOR Reduction (vph)	0	0	0	0	3	0	0	22	229	0	124	0
Lane Group Flow (vph)	82	1411	0	0	1709	0	369	341	110	0	13	0
Turn Type	Prot	NA			NA		Split	NA	Perm		Split	NA
Protected Phases	1	6			2		3	3		4	4	
Permitted Phases									3			
Actuated Green, G (s)	6.0	41.5			31.0		25.9	25.9	25.9		7.3	
Effective Green, g (s)	6.0	41.5			31.0		25.9	25.9	25.9		7.3	
Actuated g/C Ratio	0.07	0.47			0.35		0.29	0.29	0.29		0.08	
Clearance Time (s)	4.5	4.5			4.5		4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	107	2140			2009		441	409	395		119	
v/s Ratio Prot	0.05	c0.31			c0.30		c0.25	0.24			c0.01	
v/s Ratio Perm									0.08			
v/c Ratio	0.77	0.66			0.85		0.84	0.83	0.28		0.11	
Uniform Delay, d1	40.4	17.9			26.5		29.2	29.1	24.0		37.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00	1.00		1.00	
Incremental Delay, d2	27.3	0.7			3.7		12.9	13.6	0.4		0.4	
Delay (s)	67.7	18.7			30.1		42.1	42.8	24.4		37.9	
Level of Service	E	B			C		D	D	C		D	
Approach Delay (s)		21.4			30.1			36.7			37.9	
Approach LOS		C			C			D			D	

Intersection Summary

HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #10 Carroll Wy - Yorba St @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.635
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: B

Street Name:	Carroll Wy - Yorba St						17th St					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	2	0	1	0	1	0	1	0	3	0	1	1

Volume Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Base Vol:	233	53	41	66	38	182	159	1290	245	48	1105	40
Growth 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
Initial Bse:	233	53	41	66	38	182	159	1290	245	48	1105	40
Added Vol:	10	0	0	0	0	0	0	20	10	0	21	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	243	53	41	66	38	182	159	1310	255	48	1126	40
User 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
PHF Adj:	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
PHF Volume:	272	59	46	74	43	204	178	1465	285	54	1260	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	59	46	74	43	204	178	1465	285	54	1260	45
PCE 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
MLF 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
FinalVolume:	272	59	46	74	43	204	178	1465	285	54	1260	45

Saturation Flow Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	2.00	1.00	1.00	1.00	0.17	0.83	1.00	3.00	1.00	1.00	2.90	0.10
Final Sat.:	3400	1700	1700	1700	294	1406	1700	5100	1700	1700	4925	175

Capacity Analysis Module:	Carroll Wy - Yorba St			South Bound			East Bound			West Bound		
Vol/Sat:	0.08	0.03	0.03	0.04	0.14	0.14	0.10	0.29	0.17	0.03	0.26	0.26
Crit Moves:	****				****	****	****	****		****		

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #11 Yorba St - Enderle Center Drive @ 17th St

Cycle (sec): 100 Critical Vol./Cap.(X): 0.567
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St - Enderle Center Dr						17th St					
	North Bound			South Bound			East Bound			West Bound		
Approach:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	0	1	0	1	0	2	1	0	2

Volume Module:

Base Vol:	77	39	25	73	54	178	203	1177	54	48	922	90
Growth 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
Initial Bse:	77	39	25	73	54	178	203	1177	54	48	922	90
Added Vol:	0	0	0	0	0	0	0	20	0	0	21	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	77	39	25	73	54	178	203	1197	54	48	943	90
User 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
PHF Adj:	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
PHF Volume:	84	43	27	80	59	195	222	1311	59	53	1033	99
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	84	43	27	80	59	195	222	1311	59	53	1033	99
PCE 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
MLF 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
FinalVolume:	84	43	27	80	59	195	222	1311	59	53	1033	99

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.87	0.13	1.00	2.74	0.26
Final Sat.:	1700	1700	1700	1700	1700	1700	1700	4880	220	1700	4656	444

Capacity Analysis Module:

Vol/Sat:	0.05	0.03	0.02	0.05	0.03	0.11	0.13	0.27	0.27	0.03	0.22	0.22
Crit Moves:	****					****	****				****	

 Chick-Fil-A and In-N-Out at 17th Street and Tustin Avenue in County of Orange
 2035 With Project Traffic Conditions
 With Existing and Initial Geometry

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #12 Yorba St @ Vandenberg Ln

Cycle (sec): 100 Critical Vol./Cap.(X): 0.204
 Loss Time (sec): 5 Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: A

Street Name:	Yorba St						Vandenberg Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1	0	1	1	0	1	1	0	0	0	1	0

Volume Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Base Vol:	0	169	29	19	264	5	3	0	0	47	2	80
Growth 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
Initial Bse:	0	169	29	19	264	5	3	0	0	47	2	80
Added Vol:	0	10	0	0	10	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	179	29	19	274	5	3	0	0	47	2	80
User 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
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	0	211	34	22	323	6	4	0	0	55	2	94
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	211	34	22	323	6	4	0	0	55	2	94
PCE 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
MLF 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
FinalVolume:	0	211	34	22	323	6	4	0	0	55	2	94

Saturation Flow Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.72	0.28	1.00	1.96	0.04	1.00	0.00	0.00	0.96	0.04	1.00
Final Sat.:	1700	2926	474	1700	3339	61	1700	0	0	1631	69	1700

Capacity Analysis Module:	Yorba St			Yorba St			Vandenberg Ln			Vandenberg Ln		
Vol/Sat:	0.00	0.07	0.07	0.01	0.10	0.10	0.00	0.00	0.00	0.03	0.03	0.06
Crit Moves:	****			****			****			****		

Intersection												
Int Delay, s/veh	26.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	11	57	0	71	10	1141	44	89	942	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	11	58	0	72	10	1164	45	91	961	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1749	2376	484	1869	2356	605	967	0	0	1209	0	0
Stage 1	1146	1146	-	1207	1207	-	-	-	-	-	-	-
Stage 2	603	1230	-	662	1149	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	55	34	529	~ 44	35	441	708	-	-	573	-	-
Stage 1	212	272	-	194	254	-	-	-	-	-	-	-
Stage 2	453	248	-	417	271	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	40	28	529	~ 37	29	441	708	-	-	573	-	-
Mov Cap-2 Maneuver	40	28	-	~ 37	29	-	-	-	-	-	-	-
Stage 1	209	229	-	191	250	-	-	-	-	-	-	-
Stage 2	373	244	-	343	228	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.3	\$ 475.7	0.1	1.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	708	-	-	146 75	573	-	-
HCM Lane V/C Ratio	0.014	-	-	0.098 1.741	0.158	-	-
HCM Control Delay (s)	10.2	-	-	32.3\$ 475.7	12.5	-	-
HCM Lane LOS	B	-	-	D F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3 11.3	0.6	-	-

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

Intersection												
Int Delay, s/veh	2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	14	0	0	128	10	1141	44	89	981	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	14	0	0	131	10	1164	45	91	1001	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1672	2416	504	1889	2396	605	1007	0	0	1209	0	0
Stage 1	1186	1186	-	1207	1207	-	-	-	-	-	-	-
Stage 2	486	1230	-	682	1189	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	80	32	513	56	33	378	684	-	-	310	-	-
Stage 1	196	260	-	146	254	-	-	-	-	-	-	-
Stage 2	501	248	-	394	260	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	40	22	513	42	23	378	684	-	-	310	-	-
Mov Cap-2 Maneuver	40	22	-	42	23	-	-	-	-	-	-	-
Stage 1	193	184	-	144	250	-	-	-	-	-	-	-
Stage 2	323	244	-	271	184	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	19.5	0.1	1.8
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	684	-	-	513	378	310	-	-
HCM Lane V/C Ratio	0.015	-	-	0.028	0.346	0.293	-	-
HCM Control Delay (s)	10.3	-	-	12.2	19.5	21.4	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.5	1.2	-	-

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	0	66	0	0	114	8	1090	89	0	985	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	0	67	0	0	115	8	1101	90	0	995	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1576	2216	512	1560	2185	595	1023	0	0	1191	0	0
Stage 1	1009	1009	-	1162	1162	-	-	-	-	-	-	-
Stage 2	567	1207	-	398	1023	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	92	43	434	95	45	447	382	-	-	582	-	-
Stage 1	201	316	-	203	267	-	-	-	-	-	-	-
Stage 2	461	254	-	566	311	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	65	40	434	76	42	447	382	-	-	582	-	-
Mov Cap-2 Maneuver	135	142	-	150	144	-	-	-	-	-	-	-
Stage 1	188	316	-	190	250	-	-	-	-	-	-	-
Stage 2	320	238	-	479	311	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.8	15.8	0.6	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	382	-	-	434	447	582	-	-
HCM Lane V/C Ratio	0.021	-	-	0.154	0.258	-	-	-
HCM Control Delay (s)	14.6	0.5	-	14.8	15.8	0	-	-
HCM Lane LOS	B	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1	0	-	-

Buildout 2035 with Project (with Mitigation)
 14: Tustin Ave & 7-Eleven/South Dwy

MD Peak
 HCM 2010 TWSC

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	81	0	0	114	0	1090	89	0	985	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	82	0	0	115	0	1101	90	0	995	28

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1449	2200	512	1544	2169	595	1023	0	0	1191	0	0
Stage 1	1009	1009	-	1146	1146	-	-	-	-	-	-	-
Stage 2	440	1191	-	398	1023	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	138	44	434	121	46	383	382	-	-	316	-	-
Stage 1	196	316	-	157	272	-	-	-	-	-	-	-
Stage 2	518	259	-	548	311	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	97	44	434	98	46	383	382	-	-	316	-	-
Mov Cap-2 Maneuver	154	150	-	135	153	-	-	-	-	-	-	-
Stage 1	196	316	-	157	272	-	-	-	-	-	-	-
Stage 2	362	259	-	445	311	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	18.4	0	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	382	-	-	434	383	316	-	-
HCM Lane V/C Ratio	-	-	-	0.189	0.301	-	-	-
HCM Control Delay (s)	0	-	-	15.2	18.4	0	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1.2	0	-	-

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	43	74	60	49	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	80	65	53	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	279	53	53 0
Stage 1	53	-	- -
Stage 2	226	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	711	1014	1553 -
Stage 1	970	-	- -
Stage 2	812	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	673	1014	1553 -
Mov Cap-2 Maneuver	673	-	- -
Stage 1	970	-	- -
Stage 2	769	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.7	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1553	-	1014	-	-
HCM Lane V/C Ratio	0.052	-	0.046	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection												
Int Delay, s/veh	22.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	30	3	49	22	3	61	95	1079	19	43	1092	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	3	51	23	3	64	99	1124	20	45	1138	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2005	2586	585	1878	2592	572	1171	0	0	1144	0	0
Stage 1	1244	1244	-	1332	1332	-	-	-	-	-	-	-
Stage 2	761	1342	-	546	1260	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	47	25	389	57	25	463	323	-	-	606	-	-
Stage 1	137	244	-	159	222	-	-	-	-	-	-	-
Stage 2	354	219	-	460	240	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 25	16	389	31	16	463	323	-	-	606	-	-
Mov Cap-2 Maneuver	~ 25	16	-	31	16	-	-	-	-	-	-	-
Stage 1	95	226	-	110	154	-	-	-	-	-	-	-
Stage 2	208	152	-	365	222	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	\$ 456.7	207	1.7	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	323	-	-	54	84	606	-
HCM Lane V/C Ratio	0.306	-	-	1.582	1.066	0.074	-
HCM Control Delay (s)	21	-	-	\$ 456.7	207	11.4	-
HCM Lane LOS	C	-	-	F	F	B	-
HCM 95th %tile Q(veh)	1.3	-	-	8	6.2	0.2	-

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

Intersection												
Int Delay, s/veh	2.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	82	0	0	86	115	1098	19	43	1112	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	85	0	0	90	120	1144	20	45	1158	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2076	2668	596	1946	2674	582	1192	0	0	1164	0	0
Stage 1	1265	1265	-	1393	1393	-	-	-	-	-	-	-
Stage 2	811	1403	-	553	1281	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	42	22	383	52	22	456	316	-	-	596	-	-
Stage 1	132	239	-	146	207	-	-	-	-	-	-	-
Stage 2	330	205	-	456	235	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	22	13	383	27	13	456	316	-	-	596	-	-
Mov Cap-2 Maneuver	22	13	-	27	13	-	-	-	-	-	-	-
Stage 1	82	221	-	91	128	-	-	-	-	-	-	-
Stage 2	164	127	-	328	217	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.1	14.8	2.2	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	316	-	-	383	456	596	-
HCM Lane V/C Ratio	0.379	-	-	0.223	0.196	0.075	-
HCM Control Delay (s)	23.2	-	-	17.1	14.8	11.5	-
HCM Lane LOS	C	-	-	C	B	B	-
HCM 95th %tile Q(veh)	1.7	-	-	0.8	0.7	0.2	-

Appendix K – Drive-Through Lane Queueing Survey Data Worksheets

Drive-Thru Queue Count
Saturday, June 4, 2016
In N Out 815 N Birstol St, Santa Ana
Prepared by AimTD LLC

Time	Queue
12:00-12:15	12
12:15-12:30	15
12:30-12:45	17
12:45-13:00	17
13:00-13:15	16
13:15-13:30	17
13:30-13:45	17
13:45-14:00	17

Drive-Thru Queue Count
 Tuesday, June 7, 2016
 In N Out 815 N Birstol St, Santa Ana
 Prepared by AimTD LLC

Time	Queue
11:00-11:15	8
11:15-11:30	11
11:30-11:45	13
11:45-12:00	15
12:00-12:15	17
12:15-12:30	17
12:30-12:45	12
12:45-13:00	10
16:00-16:15	17
16:15-16:30	14
16:30-16:45	12
16:45-17:00	15
17:00-17:15	11
17:15-17:30	5
17:30-17:45	12
17:45-18:00	8

Drive-Thru Queue Count
Saturday, October 22, 2016
In N Out 3211 Harbor Blvd, Costa Mesa
Prepared by AimTD LLC

Time	Queue
12:00-12:15	16
12:15-12:30	18
12:30-12:45	19
12:45-13:00	21
13:00-13:15	18
13:15-13:30	20
13:30-13:45	21
13:45-14:00	20

Drive-Thru Queue Count
Tuesday, October 25, 2016
In N Out 3211 Harbor Blvd, Costa Mesa
Prepared by AimTD LLC

Time	Queue
11:00-11:15	17
11:15-11:30	18
11:30-11:45	16
11:45-12:00	20
12:00-12:15	21
12:15-12:30	19
12:30-12:45	22
12:45-13:00	21
16:00-16:15	9
16:15-16:30	8
16:30-16:45	11
16:45-17:00	9
17:00-17:15	8
17:15-17:30	10
17:30-17:45	13
17:45-18:00	15

Drive-Thru Queue Count
Saturday, October 22, 2016
In N Out 2585 N Tustin St, Orange
Prepared by AimTD LLC

Time	Queue
12:00-12:15	18
12:15-12:30	20
12:30-12:45	23
12:45-13:00	22
13:00-13:15	21
13:15-13:30	23
13:30-13:45	18
13:45-14:00	16

Drive-Thru Queue Count
Tuesday, October 25, 2016
In N Out 2585 N Tustin St, Orange
Prepared by AimTD LLC

Time	Queue
11:00-11:15	10
11:15-11:30	9
11:30-11:45	12
11:45-12:00	13
12:00-12:15	12
12:15-12:30	15
12:30-12:45	14
12:45-13:00	15
16:00-16:15	8
16:15-16:30	9
16:30-16:45	13
16:45-17:00	12
17:00-17:15	15
17:15-17:30	10
17:30-17:45	9
17:45-18:00	8

Site 2 (Q)

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com		
In N Out		
11 Rollins Road, Milbrae		
Queue Study		
Time	Wed 27/May 15	Notes
16:00	13	
16:15	14	
16:30	15	
16:45	14	
17:00	13	
17:15	15	
17:30	16	
17:45	15	

Site 3 (Q)

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com		
In N Out		
9 Vetrans Boulevard, Redwood Ci		
Queue Study		
Time	Wed 27/May 15	Notes
16:00	14	
16:15	16	
16:30	16	
16:45	15	
17:00	14	
17:15	14	
17:30	15	
17:45	15	

Site 4 (Q)

PREPARED BY: AimTD LLC. tel: 714 253 7888 pacific@aimtd.com		
In N Out		
445 Industrial Road, San Carlos		
Queue Study		
Time	Wed 27/May 15	Notes
16:00	17	
16:15	16	
16:30	16	
16:45	16	
17:00	16	
17:15	16	
17:30	17	
17:45	17	

Drive-Through Lane Queue Study
In-N-Out Rocklin

02.04.16

Thursday

Time	Vehicles
16:00-16:15	5
16:15-16:30	8
16:30-16:45	7
16:45-17:00	6
17:00-17:15	8
17:15-17:30	9
17:30-17:45	11
17:45-18:00	12

Prepared by AimTD LLC tel. 714 253 7888

cs@aimtd.com

Drive-Through Lane Queue Study
In-N-Out Vacaville

02.04.16

Thursday

Time	Vehicles
16:00-16:15	11
16:15-16:30	14
16:30-16:45	16
16:45-17:00	17
17:00-17:15	13
17:15-17:30	11
17:30-17:45	13
17:45-18:00	18

Prepared by AimTD LLC tel. 714 253 7888

cs@aimtd.com

Drive-Through Lane Queue Study
In-N-Out Fairfield

02.04.16

Thursday

Time	Vehicles
16:00-16:15	5
16:15-16:30	8
16:30-16:45	9
16:45-17:00	16
17:00-17:15	17
17:15-17:30	16
17:30-17:45	8
17:45-18:00	17

Prepared by AimTD LLC tel. 714 253 7888

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Wednesday, May 16,2012

CITY: Long Beach

PROJECT: In N Out Burger

AM Period	IN	OUT	PM Period	IN	OUT	MAXIMUM QUEUE
04:00			16:00	16	19	6
04:15			16:15	12	17	5
04:30			16:30	14	14	3
04:45			16:45	16	58 10 60	6
05:00			17:00	19	14	5
05:15			17:15	20	19	7
05:30			17:30	19	19	7
05:45			17:45	11	69 21 73	5

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Wednesday, May 16th, 2012

CITY: Los Angeles

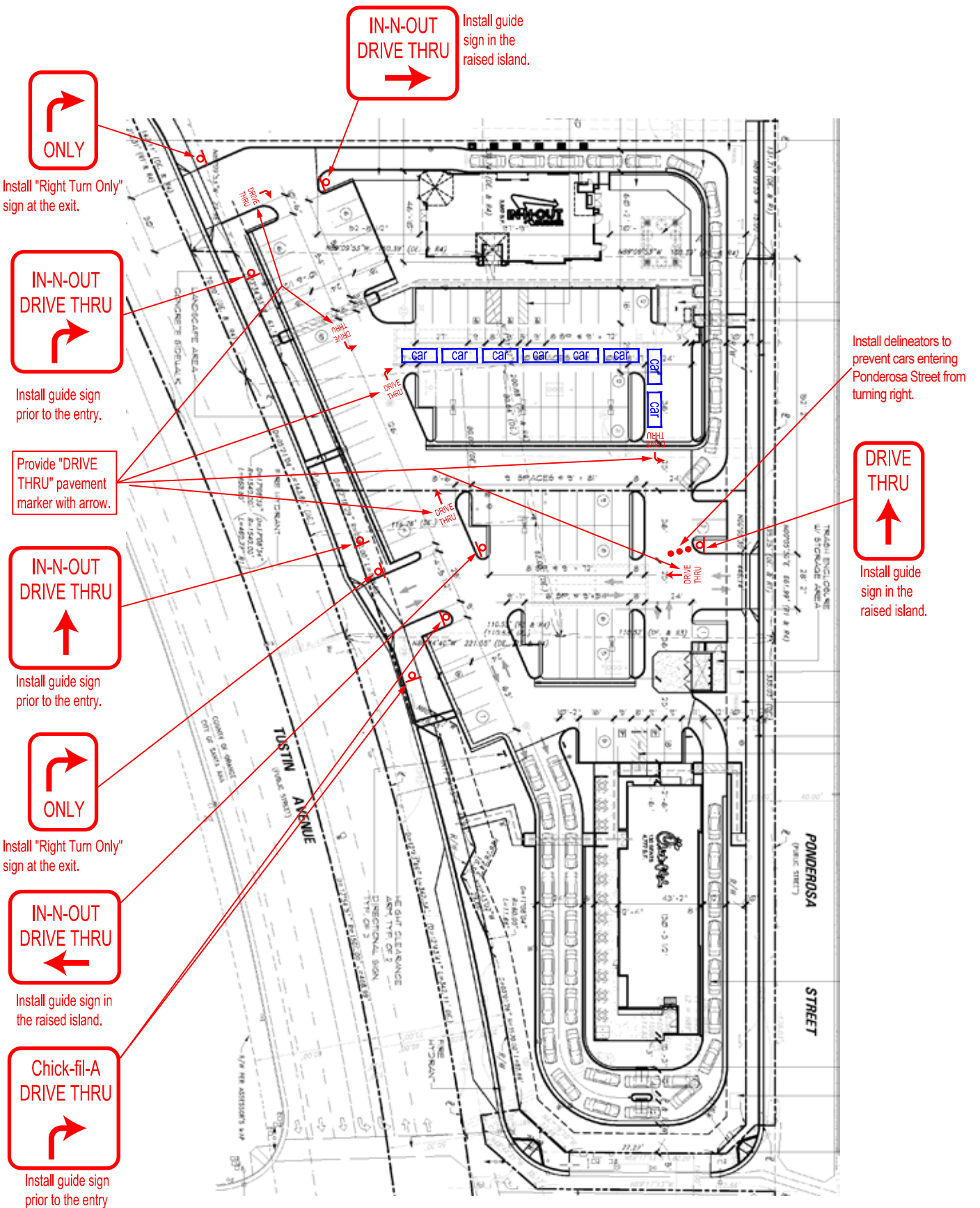
PROJECT: In-N-Out Burger

AM Period	IN	OUT	PM Period	IN	OUT	MAXIMUM QUEUE
04:00			16:00	31	24	17
04:15			16:15	18	18	15
04:30			16:30	27	28	12
04:45			16:45	33	22	10
05:00			17:00	34	30	9
05:15			17:15	25	33	14
05:30			17:30	36	23	17
05:45			17:45	32	127	111

PACIFIC TRAFFIC & TRANSIT DATA SERVICES

Appendix L – Traffic Control Measures

Recommended Traffic Control Measures



Appendix M – Project Driveway Queuing Analysis Worksheets with a Full Access at the North Project Driveway

Intersection												
Int Delay, s/veh	3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	24	0	31	1	562	20	39	2356	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	26	0	33	1	598	21	41	2506	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2895	3194	1258	1936	3199	299	2516	0	0	598	0	0
Stage 1	2594	2594	-	600	600	-	-	-	-	-	-	-
Stage 2	301	600	-	1336	2599	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	10	162	40	10	697	177	-	-	975	-	-
Stage 1	25	51	-	455	488	-	-	-	-	-	-	-
Stage 2	683	488	-	162	50	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	6	10	162	34	10	697	177	-	-	975	-	-
Mov Cap-2 Maneuver	6	10	-	34	10	-	-	-	-	-	-	-
Stage 1	25	49	-	452	485	-	-	-	-	-	-	-
Stage 2	647	485	-	137	48	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.2	150.3	0	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	177	-	-	162	73	975	-
HCM Lane V/C Ratio	0.006	-	-	0.118	0.802	0.043	-
HCM Control Delay (s)	25.5	-	-	30.2	150.3	8.9	-
HCM Lane LOS	D	-	-	D	F	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	3.9	0.1	-

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	33	0	0	50	1	540	39	0	2353	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	53	1	574	41	0	2503	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2809	3097	1268	1578	3113	287	2536	0	0	574	0	0
Stage 1	2520	2520	-	577	577	-	-	-	-	-	-	-
Stage 2	289	577	-	1001	2536	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	13	12	137	92	11	710	66	-	-	995	-	-
Stage 1	16	55	-	455	500	-	-	-	-	-	-	-
Stage 2	670	500	-	240	54	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	12	12	137	67	11	710	66	-	-	995	-	-
Mov Cap-2 Maneuver	15	47	-	139	45	-	-	-	-	-	-	-
Stage 1	16	55	-	445	489	-	-	-	-	-	-	-
Stage 2	606	489	-	178	54	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.1	10.5	0.6	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	66	-	-	137	710	995	-	-
HCM Lane V/C Ratio	0.016	-	-	0.256	0.075	-	-	-
HCM Control Delay (s)	60.4	0.5	-	40.1	10.5	0	-	-
HCM Lane LOS	F	A	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1	0.2	0	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	19	33	33	22	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	36	36	24	0

Major/Minor	Minor2	Major1		Major2
Conflicting Flow All	132	24	24	0
Stage 1	24	-	-	-
Stage 2	108	-	-	-
Critical Hdwy	6.42	6.22	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-
Pot Cap-1 Maneuver	862	1052	1591	-
Stage 1	999	-	-	-
Stage 2	916	-	-	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	842	1052	1591	-
Mov Cap-2 Maneuver	842	-	-	-
Stage 1	999	-	-	-
Stage 2	895	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1591	-	1052	-	-
HCM Lane V/C Ratio	0.023	-	0.02	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	53.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	0	5	31	0	39	5	1993	26	50	933	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	33	0	42	5	2143	28	54	1003	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2194	3266	503	2763	3267	1072	1005	0	0	2143	0	0
Stage 1	1112	1112	-	2154	2154	-	-	-	-	-	-	-
Stage 2	1082	2154	-	609	1113	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	25	9	514	~ 9	9	216	685	-	-	249	-	-
Stage 1	223	282	-	49	86	-	-	-	-	-	-	-
Stage 2	232	86	-	449	282	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	17	7	514	~ 7	7	216	685	-	-	249	-	-
Mov Cap-2 Maneuver	17	7	-	~ 7	7	-	-	-	-	-	-	-
Stage 1	221	221	-	49	85	-	-	-	-	-	-	-
Stage 2	186	85	-	348	221	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	133.8	\$ 2314.9	0	1.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	685	-	-	37	15	249	-	-
HCM Lane V/C Ratio	0.008	-	-	0.262	5.018	0.216	-	-
HCM Control Delay (s)	10.3	-	-	133.8	\$ 2314.9	23.4	-	-
HCM Lane LOS	B	-	-	F	F	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.9	10.3	0.8	-	-

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

Intersection												
Int Delay, s/veh	0.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	0	48	0	0	61	8	1953	50	0	928	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	52	0	0	66	9	2100	54	0	998	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2084	3134	518	2516	3152	1050	1035	0	0	2100	0	0
Stage 1	1017	1017	-	2117	2117	-	-	-	-	-	-	-
Stage 2	1067	2117	-	399	1035	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	41	11	430	21	11	224	376	-	-	258	-	-
Stage 1	198	313	-	51	90	-	-	-	-	-	-	-
Stage 2	232	90	-	566	307	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	29	11	430	18	11	224	376	-	-	258	-	-
Mov Cap-2 Maneuver	95	67	-	45	67	-	-	-	-	-	-	-
Stage 1	198	313	-	51	90	-	-	-	-	-	-	-
Stage 2	164	90	-	498	307	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.5	27.6	0.1	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	376	-	-	430	224	258	-	-
HCM Lane V/C Ratio	0.023	-	-	0.12	0.293	-	-	-
HCM Control Delay (s)	14.8	0	-	14.5	27.6	0	-	-
HCM Lane LOS	B	A	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1.2	0	-	-

Intersection

Int Delay, s/veh 2.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	23	42	76	36	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	46	83	39	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	213	39	39
Stage 1	39	-	-
Stage 2	174	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	775	1033	1571
Stage 1	983	-	-
Stage 2	856	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	751	1033	1571
Mov Cap-2 Maneuver	751	-	-
Stage 1	983	-	-
Stage 2	829	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1571	-	1033	-	-
HCM Lane V/C Ratio	0.029	-	0.024	-	-
HCM Control Delay (s)	7.4	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	16.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	10	57	0	71	9	1044	44	89	860	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	10	58	0	72	9	1065	45	91	878	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1613	2146	441	1704	2148	533	883	0	0	1065	0	0
Stage 1	1062	1062	-	1084	1084	-	-	-	-	-	-	-
Stage 2	551	1084	-	620	1064	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	69	48	564	59	48	491	762	-	-	650	-	-
Stage 1	239	298	-	231	291	-	-	-	-	-	-	-
Stage 2	486	291	-	442	298	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	52	41	564	~ 51	41	491	762	-	-	650	-	-
Mov Cap-2 Maneuver	52	41	-	~ 51	41	-	-	-	-	-	-	-
Stage 1	236	256	-	228	288	-	-	-	-	-	-	-
Stage 2	409	288	-	373	256	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.8	265	0.1	1.1
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	762	-	-	214	101	650	-
HCM Lane V/C Ratio	0.012	-	-	0.057	1.293	0.14	-
HCM Control Delay (s)	9.8	-	-	22.8	265	11.4	-
HCM Lane LOS	A	-	-	C	F	B	-
HCM 95th %tile Q(veh)	0	-	-	0.2	9.1	0.5	-

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

Intersection												
Int Delay, s/veh	1.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	0	60	0	0	114	7	993	89	0	903	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	61	0	0	115	7	1003	90	0	912	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1441	1942	469	1382	1954	502	937	0	0	1003	0	0
Stage 1	925	925	-	1017	1017	-	-	-	-	-	-	-
Stage 2	516	1017	-	365	937	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	114	64	463	125	63	515	420	-	-	686	-	-
Stage 1	230	346	-	248	313	-	-	-	-	-	-	-
Stage 2	494	313	-	593	342	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	86	61	463	105	60	515	420	-	-	686	-	-
Mov Cap-2 Maneuver	161	174	-	187	171	-	-	-	-	-	-	-
Stage 1	220	346	-	237	299	-	-	-	-	-	-	-
Stage 2	367	299	-	515	342	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	14	0.3	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	420	-	-	463	515	686	-
HCM Lane V/C Ratio	0.017	-	-	0.131	0.224	-	-
HCM Control Delay (s)	13.7	0.2	-	13.9	14	0	-
HCM Lane LOS	B	A	-	B	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.8	0	-

Intersection

Int Delay, s/veh 4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	43	74	54	44	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	80	59	48	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	268	48	48
Stage 1	48	-	-
Stage 2	220	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	721	1021	1559
Stage 1	974	-	-
Stage 2	817	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	683	1021	1559
Mov Cap-2 Maneuver	683	-	-
Stage 1	974	-	-
Stage 2	774	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	4.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1559	-	1021	-	-
HCM Lane V/C Ratio	0.052	-	0.046	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection												
Int Delay, s/veh	3.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	24	0	31	1	596	20	39	2420	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	26	0	33	1	634	21	41	2574	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2981	3298	1292	2006	3303	317	2584	0	0	634	0	0
Stage 1	2662	2662	-	636	636	-	-	-	-	-	-	-
Stage 2	319	636	-	1370	2667	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	6	8	154	35	8	679	166	-	-	945	-	-
Stage 1	23	47	-	433	470	-	-	-	-	-	-	-
Stage 2	667	470	-	154	46	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	5	8	154	29	8	679	166	-	-	945	-	-
Mov Cap-2 Maneuver	5	8	-	29	8	-	-	-	-	-	-	-
Stage 1	23	45	-	430	467	-	-	-	-	-	-	-
Stage 2	631	467	-	129	44	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	31.7	201.5	0	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	166	-	-	154	63	945	-	-
HCM Lane V/C Ratio	0.006	-	-	0.124	0.929	0.044	-	-
HCM Control Delay (s)	26.8	-	-	31.7	201.5	9	-	-
HCM Lane LOS	D	-	-	D	F	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	4.4	0.1	-	-

Intersection												
Int Delay, s/veh	0.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	34	0	0	50	1	573	39	0	2417	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	53	1	610	41	0	2571	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2895	3200	1303	1641	3217	305	2605	0	0	610	0	0
Stage 1	2588	2588	-	612	612	-	-	-	-	-	-	-
Stage 2	307	612	-	1029	2605	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	11	10	130	83	10	691	61	-	-	965	-	-
Stage 1	14	51	-	434	482	-	-	-	-	-	-	-
Stage 2	654	482	-	231	50	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	10	10	130	59	10	691	61	-	-	965	-	-
Mov Cap-2 Maneuver	13	43	-	129	42	-	-	-	-	-	-	-
Stage 1	14	51	-	423	469	-	-	-	-	-	-	-
Stage 2	588	469	-	167	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43	10.6	0.7	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	61	-	-	130	691	965	-
HCM Lane V/C Ratio	0.017	-	-	0.278	0.077	-	-
HCM Control Delay (s)	65.1	0.6	-	43	10.6	0	-
HCM Lane LOS	F	A	-	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.2	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	19	33	34	22	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	36	37	24	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	133	24	24	0	-	0
Stage 1	24	-	-	-	-	-
Stage 2	109	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	861	1052	1591	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	916	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	841	1052	1591	-	-	-
Mov Cap-2 Maneuver	841	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1591	-	1052	-	-
HCM Lane V/C Ratio	0.023	-	0.02	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	60.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	4	0	5	31	0	39	5	2059	26	50	981	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	5	33	0	42	5	2214	28	54	1055	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2281	3388	528	2860	3390	1107	1057	0	0	2214	0	0
Stage 1	1163	1163	-	2225	2225	-	-	-	-	-	-	-
Stage 2	1118	2225	-	635	1165	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	22	7	495	~ 8	7	205	655	-	-	233	-	-
Stage 1	207	267	-	44	79	-	-	-	-	-	-	-
Stage 2	221	79	-	433	267	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	14	5	495	~ 6	5	205	655	-	-	233	-	-
Mov Cap-2 Maneuver	14	5	-	~ 6	5	-	-	-	-	-	-	-
Stage 1	205	205	-	44	78	-	-	-	-	-	-	-
Stage 2	174	78	-	329	205	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	174.2	\$ 2731.9	0	1.2
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	655	-	-	30	13	233	-	-
HCM Lane V/C Ratio	0.008	-	-	0.323	5.79	0.231	-	-
HCM Control Delay (s)	10.5	-	-	174.2	\$ 2731.9	25	-	-
HCM Lane LOS	B	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0	-	-	1	10.5	0.9	-	-

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

Intersection												
Int Delay, s/veh	0.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	0	49	0	0	61	8	2018	50	0	975	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	53	0	0	66	9	2170	54	0	1048	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2170	3255	544	2606	3274	1085	1087	0	0	2170	0	0
Stage 1	1068	1068	-	2187	2187	-	-	-	-	-	-	-
Stage 2	1102	2187	-	419	1087	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	36	9	414	18	9	212	355	-	-	243	-	-
Stage 1	182	296	-	46	83	-	-	-	-	-	-	-
Stage 2	221	83	-	550	290	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	25	9	414	16	9	212	355	-	-	243	-	-
Mov Cap-2 Maneuver	87	62	-	40	61	-	-	-	-	-	-	-
Stage 1	182	296	-	46	83	-	-	-	-	-	-	-
Stage 2	153	83	-	480	290	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	29.4	0.1	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	355	-	-	414	212	243	-
HCM Lane V/C Ratio	0.024	-	-	0.127	0.309	-	-
HCM Control Delay (s)	15.4	0	-	15	29.4	0	-
HCM Lane LOS	C	A	-	C	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	1.3	0	-

Intersection

Int Delay, s/veh 2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	23	42	78	37	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	46	85	40	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	216	40	40
Stage 1	40	-	-
Stage 2	176	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	772	1031	1570
Stage 1	982	-	-
Stage 2	855	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	748	1031	1570
Mov Cap-2 Maneuver	748	-	-
Stage 1	982	-	-
Stage 2	828	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1570	-	1031	-	-
HCM Lane V/C Ratio	0.029	-	0.024	-	-
HCM Control Delay (s)	7.4	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	19.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	0	10	57	0	71	9	1091	44	89	910	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	10	58	0	72	9	1113	45	91	929	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1688	2245	467	1778	2247	557	934	0	0	1113	0	0
Stage 1	1113	1113	-	1132	1132	-	-	-	-	-	-	-
Stage 2	575	1132	-	646	1115	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	61	41	542	~ 52	41	474	729	-	-	623	-	-
Stage 1	222	282	-	216	276	-	-	-	-	-	-	-
Stage 2	470	276	-	427	282	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	45	35	542	~ 45	35	474	729	-	-	623	-	-
Mov Cap-2 Maneuver	45	35	-	~ 45	35	-	-	-	-	-	-	-
Stage 1	219	241	-	213	273	-	-	-	-	-	-	-
Stage 2	393	273	-	358	241	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.1	\$ 337.4	0.1	1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	729	-	-	191	90	623	-
HCM Lane V/C Ratio	0.013	-	-	0.064	1.451	0.146	-
HCM Control Delay (s)	10	-	-	25.1\$ 337.4	11.8	-	-
HCM Lane LOS	B	-	-	D	F	B	-
HCM 95th %tile Q(veh)	0	-	-	0.2	10	0.5	-

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

Intersection												
Int Delay, s/veh	1.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	13	0	61	0	0	114	7	1041	89	0	954	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	0	62	0	0	115	7	1052	90	0	964	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1517	2043	495	1451	2056	526	990	0	0	1052	0	0
Stage 1	977	977	-	1066	1066	-	-	-	-	-	-	-
Stage 2	540	1066	-	385	990	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	101	56	445	112	55	496	396	-	-	657	-	-
Stage 1	211	327	-	232	297	-	-	-	-	-	-	-
Stage 2	478	297	-	577	323	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	75	53	445	93	52	496	396	-	-	657	-	-
Mov Cap-2 Maneuver	147	162	-	173	160	-	-	-	-	-	-	-
Stage 1	200	327	-	220	282	-	-	-	-	-	-	-
Stage 2	349	282	-	497	323	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.4	14.4	0.3	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	396	-	-	445	496	657	-	-
HCM Lane V/C Ratio	0.018	-	-	0.138	0.232	-	-	-
HCM Control Delay (s)	14.3	0.2	-	14.4	14.4	0	-	-
HCM Lane LOS	B	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.9	0	-	-

Intersection

Int Delay, s/veh 4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	43	74	55	45	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	80	60	49	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	270	49	49 0
Stage 1	49	-	- -
Stage 2	221	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	719	1020	1558 -
Stage 1	973	-	- -
Stage 2	816	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	681	1020	1558 -
Mov Cap-2 Maneuver	681	-	- -
Stage 1	973	-	- -
Stage 2	773	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.7	4.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1558	-	1020	-	-
HCM Lane V/C Ratio	0.052	-	0.046	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection												
Int Delay, s/veh	6.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	20	24	0	31	2	625	20	39	2589	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	22	26	0	34	2	679	22	42	2814	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3248	3588	1413	2176	3594	340	2825	0	0	679	0	0
Stage 1	2904	2904	-	684	684	-	-	-	-	-	-	-
Stage 2	344	684	-	1492	2910	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.6	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	4	5	145	~ 26	5	656	133	-	-	909	-	-
Stage 1	16	35	-	405	447	-	-	-	-	-	-	-
Stage 2	645	447	-	129	34	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	4	5	145	~ 21	5	656	133	-	-	909	-	-
Mov Cap-2 Maneuver	4	5	-	~ 21	5	-	-	-	-	-	-	-
Stage 1	16	33	-	399	440	-	-	-	-	-	-	-
Stage 2	603	440	-	105	32	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.2	\$ 375	0.1	0.1
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	133	-	-	145	46	909	-	-
HCM Lane V/C Ratio	0.016	-	-	0.15	1.3	0.047	-	-
HCM Control Delay (s)	32.5	-	-	34.2	\$ 375	9.2	-	-
HCM Lane LOS	D	-	-	D	F	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	5.7	0.1	-	-

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

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	40	0	0	50	2	604	39	0	2586	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	54	2	657	42	0	2811	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3163	3491	1424	1785	3510	328	2849	0	0	657	0	0
Stage 1	2830	2830	-	661	661	-	-	-	-	-	-	-
Stage 2	333	661	-	1124	2849	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	6	107	67	6	668	45	-	-	926	-	-
Stage 1	9	38	-	406	458	-	-	-	-	-	-	-
Stage 2	632	458	-	201	37	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	6	6	107	38	6	668	45	-	-	926	-	-
Mov Cap-2 Maneuver	7	33	-	93	30	-	-	-	-	-	-	-
Stage 1	8	38	-	376	425	-	-	-	-	-	-	-
Stage 2	538	425	-	119	37	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	60	10.9	2.2	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	45	-	-	107	668	926	-	-
HCM Lane V/C Ratio	0.048	-	-	0.406	0.081	-	-	-
HCM Control Delay (s)	89	2.1	-	60	10.9	0	-	-
HCM Lane LOS	F	A	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.7	0.3	0	-	-

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	19	33	40	25	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	36	43	27	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	142	27	27 0
Stage 1	27	-	- -
Stage 2	115	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	851	1048	1587 -
Stage 1	996	-	- -
Stage 2	910	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	831	1048	1587 -
Mov Cap-2 Maneuver	831	-	- -
Stage 1	996	-	- -
Stage 2	889	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1587	-	1048	-	-
HCM Lane V/C Ratio	0.023	-	0.02	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	87.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	0	10	31	0	39	10	2183	26	50	1036	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	11	34	0	42	11	2373	28	54	1126	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2446	3633	566	3067	3635	1186	1132	0	0	2373	0	0
Stage 1	1238	1238	-	2395	2395	-	-	-	-	-	-	-
Stage 2	1208	2395	-	672	1240	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	16	5	467	~ 5	5	181	613	-	-	202	-	-
Stage 1	186	246	-	34	65	-	-	-	-	-	-	-
Stage 2	194	65	-	412	245	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	10	4	467	~ 4	4	181	613	-	-	202	-	-
Mov Cap-2 Maneuver	10	4	-	~ 4	4	-	-	-	-	-	-	-
Stage 1	183	180	-	~ 33	64	-	-	-	-	-	-	-
Stage 2	146	64	-	295	180	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	233.4	\$ 4164.2	0	1.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	613	-	-	29	9	202	-	-
HCM Lane V/C Ratio	0.018	-	-	0.562	8.454	0.269	-	-
HCM Control Delay (s)	11	-	-	233.4	4164.2	29.3	-	-
HCM Lane LOS	B	-	-	F	F	D	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	11	1	-	-

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

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	20	0	50	0	0	61	10	2148	50	0	1028	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	54	0	0	66	11	2335	54	0	1117	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2328	3496	580	2804	3518	1167	1161	0	0	2335	0	0
Stage 1	1139	1139	-	2357	2357	-	-	-	-	-	-	-
Stage 2	1189	2357	-	447	1161	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.8	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	28	6	392	13	6	195	327	-	-	209	-	-
Stage 1	163	274	-	36	68	-	-	-	-	-	-	-
Stage 2	195	68	-	529	268	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 18	6	392	11	6	195	327	-	-	209	-	-
Mov Cap-2 Maneuver	74	51	-	32	51	-	-	-	-	-	-	-
Stage 1	163	274	-	36	68	-	-	-	-	-	-	-
Stage 2	129	68	-	456	268	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.7	32.7	0.1	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	327	-	-	392	195	209	-
HCM Lane V/C Ratio	0.033	-	-	0.139	0.34	-	-
HCM Control Delay (s)	16.4	0	-	15.7	32.7	0	-
HCM Lane LOS	C	A	-	C	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1.4	0	-

Notes

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

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	23	42	80	40	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	25	46	87	43	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	221	43	43 0
Stage 1	43	-	- -
Stage 2	178	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	767	1027	1566 -
Stage 1	979	-	- -
Stage 2	853	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	743	1027	1566 -
Mov Cap-2 Maneuver	743	-	- -
Stage 1	979	-	- -
Stage 2	827	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1566	-	1027	-	-
HCM Lane V/C Ratio	0.029	-	0.024	-	-
HCM Control Delay (s)	7.4	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	37.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	0	11	57	0	71	10	1141	44	89	940	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	0	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	12	62	0	77	11	1240	48	97	1022	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1860	2480	514	1966	2484	620	1028	0	0	1240	0	0
Stage 1	1218	1218	-	1262	1262	-	-	-	-	-	-	-
Stage 2	642	1262	-	704	1222	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	45	29	505	~ 37	29	431	671	-	-	557	-	-
Stage 1	191	251	-	180	239	-	-	-	-	-	-	-
Stage 2	429	239	-	394	250	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	32	24	505	~ 31	24	431	671	-	-	557	-	-
Mov Cap-2 Maneuver	32	24	-	~ 31	24	-	-	-	-	-	-	-
Stage 1	188	207	-	177	235	-	-	-	-	-	-	-
Stage 2	346	235	-	318	206	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	39	\$ 678.6	0.1	1.1
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	671	-	-	121	64	557	-	-
HCM Lane V/C Ratio	0.016	-	-	0.126	2.174	0.174	-	-
HCM Control Delay (s)	10.5	-	-	39	\$ 678.6	12.8	-	-
HCM Lane LOS	B	-	-	E	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	13.3	0.6	-	-

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

Intersection												
Int Delay, s/veh	1.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	15	0	66	0	0	114	8	1090	89	0	983	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	0	72	0	0	124	9	1185	97	0	1068	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1694	2286	549	1629	2301	592	1099	0	0	1185	0	0
Stage 1	1084	1084	-	1202	1202	-	-	-	-	-	-	-
Stage 2	610	1202	-	427	1099	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	7.14	6.99	6.54	6.94	5.34	-	-	4.14	-	-
Critical Hdwy Stg 1	7.34	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.92	3.67	4.02	3.32	3.12	-	-	2.22	-	-
Pot Cap-1 Maneuver	77	39	411	85	38	449	351	-	-	585	-	-
Stage 1	178	291	-	192	256	-	-	-	-	-	-	-
Stage 2	435	256	-	544	287	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	52	35	411	65	35	449	351	-	-	585	-	-
Mov Cap-2 Maneuver	116	134	-	136	131	-	-	-	-	-	-	-
Stage 1	162	291	-	174	232	-	-	-	-	-	-	-
Stage 2	286	232	-	449	287	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.6	16	0.6	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	351	-	-	411	449	585	-	-
HCM Lane V/C Ratio	0.025	-	-	0.175	0.276	-	-	-
HCM Control Delay (s)	15.5	0.5	-	15.6	16	0	-	-
HCM Lane LOS	C	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	1.1	0	-	-

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	43	74	60	49	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	47	80	65	53	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	279	53	53 0
Stage 1	53	-	- -
Stage 2	226	-	- -
Critical Hdwy	6.42	6.22	4.12 -
Critical Hdwy Stg 1	5.42	-	- -
Critical Hdwy Stg 2	5.42	-	- -
Follow-up Hdwy	3.518	3.318	2.218 -
Pot Cap-1 Maneuver	711	1014	1553 -
Stage 1	970	-	- -
Stage 2	812	-	- -
Platoon blocked, %			- -
Mov Cap-1 Maneuver	673	1014	1553 -
Mov Cap-2 Maneuver	673	-	- -
Stage 1	970	-	- -
Stage 2	769	-	- -

Approach	EB	NB	SB
HCM Control Delay, s	8.7	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1553	-	1014	-	-
HCM Lane V/C Ratio	0.052	-	0.046	-	-
HCM Control Delay (s)	7.4	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Appendix N – Project Driveway Queuing Analysis Worksheets with a Restricted Westbound Left Turn at the North Project Driveway

Intersection												
Int Delay, s/veh	0.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	55	1	562	20	39	2373	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	59	1	598	21	41	2524	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2853	3233	1267	1956	3228	310	2534	0	0	619	0	0
Stage 1	2612	2612	-	611	611	-	-	-	-	-	-	-
Stage 2	241	621	-	1345	2617	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	12	9	160	51	9	585	174	-	-	595	-	-
Stage 1	24	50	-	379	482	-	-	-	-	-	-	-
Stage 2	705	477	-	157	49	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	10	8	160	42	8	585	174	-	-	595	-	-
Mov Cap-2 Maneuver	10	8	-	42	8	-	-	-	-	-	-	-
Stage 1	24	47	-	377	479	-	-	-	-	-	-	-
Stage 2	631	474	-	129	46	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.5	11.8	0	0.2
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	174	-	-	160	585	595	-
HCM Lane V/C Ratio	0.006	-	-	0.12	0.1	0.07	-
HCM Control Delay (s)	25.8	-	-	30.5	11.8	11.5	-
HCM Lane LOS	D	-	-	D	B	B	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.2	-

Intersection												
Int Delay, s/veh	0.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	33	0	0	50	1	540	39	0	2353	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	53	1	574	41	0	2503	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2752	3138	1268	1598	3133	308	2536	0	0	616	0	0
Stage 1	2520	2520	-	597	597	-	-	-	-	-	-	-
Stage 2	232	618	-	1001	2536	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	21	11	137	112	11	587	66	-	-	597	-	-
Stage 1	16	55	-	377	490	-	-	-	-	-	-	-
Stage 2	689	479	-	235	54	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	19	11	137	82	11	587	66	-	-	597	-	-
Mov Cap-2 Maneuver	15	47	-	138	45	-	-	-	-	-	-	-
Stage 1	16	55	-	368	479	-	-	-	-	-	-	-
Stage 2	612	468	-	175	54	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.1	11.7	0.6	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	66	-	-	137	587	597	-
HCM Lane V/C Ratio	0.016	-	-	0.256	0.091	-	-
HCM Control Delay (s)	60.4	0.5	-	40.1	11.7	0	-
HCM Lane LOS	F	A	-	E	B	A	-
HCM 95th %tile Q(veh)	0	-	-	1	0.3	0	-

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	9	0	0	70	5	1993	26	50	954	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	10	0	0	75	5	2143	28	54	1026	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2002	3316	514	2788	3303	1085	1028	0	0	2171	0	0
Stage 1	1134	1134	-	2168	2168	-	-	-	-	-	-	-
Stage 2	868	2182	-	620	1135	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	6.5	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	47	8	505	13	8	221	671	-	-	102	-	-
Stage 1	211	276	-	29	85	-	-	-	-	-	-	-
Stage 2	291	83	-	429	275	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	18	4	505	7	4	221	671	-	-	102	-	-
Mov Cap-2 Maneuver	18	4	-	7	4	-	-	-	-	-	-	-
Stage 1	209	130	-	29	84	-	-	-	-	-	-	-
Stage 2	190	82	-	198	129	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	29.5	0	3.7
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	671	-	-	505	221	102	-	-
HCM Lane V/C Ratio	0.008	-	-	0.019	0.341	0.527	-	-
HCM Control Delay (s)	10.4	-	-	12.3	29.5	74.2	-	-
HCM Lane LOS	B	-	-	B	D	F	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.4	2.4	-	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	66	0	0	61	8	1953	50	0	927	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	71	0	0	66	9	2100	54	0	997	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1873	3187	517	2543	3178	1077	1034	0	0	2154	0	0
Stage 1	1016	1016	-	2144	2144	-	-	-	-	-	-	-
Stage 2	857	2171	-	399	1034	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	6.9	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	76	10	431	29	10	198	377	-	-	104	-	-
Stage 1	194	314	-	30	87	-	-	-	-	-	-	-
Stage 2	288	84	-	548	308	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	51	10	431	24	10	198	377	-	-	104	-	-
Mov Cap-2 Maneuver	112	63	-	27	65	-	-	-	-	-	-	-
Stage 1	194	314	-	30	87	-	-	-	-	-	-	-
Stage 2	193	84	-	458	308	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15	31.9	0.1	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	377	-	-	431	198	104	-
HCM Lane V/C Ratio	0.023	-	-	0.165	0.331	-	-
HCM Control Delay (s)	14.8	0	-	15	31.9	0	-
HCM Lane LOS	B	A	-	C	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	1.4	0	-

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	12	0	0	128	9	1044	44	89	898	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	0	0	131	9	1065	45	91	916	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1545	2230	461	1746	2209	555	921	0	0	1110	0	0
Stage 1	1101	1101	-	1106	1106	-	-	-	-	-	-	-
Stage 2	444	1129	-	640	1103	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	97	42	547	71	44	407	737	-	-	346	-	-
Stage 1	221	286	-	172	284	-	-	-	-	-	-	-
Stage 2	531	277	-	418	285	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	52	31	547	55	32	407	737	-	-	346	-	-
Mov Cap-2 Maneuver	52	31	-	55	32	-	-	-	-	-	-	-
Stage 1	218	211	-	170	281	-	-	-	-	-	-	-
Stage 2	356	274	-	301	210	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	18	0.1	1.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	737	-	-	547	407	346	-	-
HCM Lane V/C Ratio	0.012	-	-	0.022	0.321	0.262	-	-
HCM Control Delay (s)	9.9	-	-	11.7	18	19.1	-	-
HCM Lane LOS	A	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.4	1	-	-

Intersection												
Int Delay, s/veh	1.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	73	0	0	114	7	993	89	0	902	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	74	0	0	115	7	1003	90	0	911	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1339	2031	468	1426	1998	546	936	0	0	1093	0	0
Stage 1	924	924	-	1062	1062	-	-	-	-	-	-	-
Stage 2	415	1107	-	364	936	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	161	57	463	143	59	413	420	-	-	353	-	-
Stage 1	225	346	-	180	298	-	-	-	-	-	-	-
Stage 2	536	284	-	575	342	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	112	54	463	116	56	413	420	-	-	353	-	-
Mov Cap-2 Maneuver	169	163	-	150	166	-	-	-	-	-	-	-
Stage 1	215	346	-	172	285	-	-	-	-	-	-	-
Stage 2	370	272	-	483	342	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	17.1	0.3	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	420	-	-	463	413	353	-
HCM Lane V/C Ratio	0.017	-	-	0.159	0.279	-	-
HCM Control Delay (s)	13.7	0.2	-	14.2	17.1	0	-
HCM Lane LOS	B	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	1.1	0	-

Intersection												
Int Delay, s/veh	0.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	18	0	0	55	1	596	20	39	2437	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	59	1	634	21	41	2593	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2936	3337	1301	2026	3332	328	2602	0	0	655	0	0
Stage 1	2680	2680	-	647	647	-	-	-	-	-	-	-
Stage 2	256	657	-	1379	2685	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	10	8	152	45	8	570	163	-	-	572	-	-
Stage 1	22	46	-	358	465	-	-	-	-	-	-	-
Stage 2	690	460	-	149	45	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	8	7	152	37	7	570	163	-	-	572	-	-
Mov Cap-2 Maneuver	8	7	-	37	7	-	-	-	-	-	-	-
Stage 1	22	43	-	356	462	-	-	-	-	-	-	-
Stage 2	615	457	-	121	42	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.1	12	0	0.2
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	163	-	-	152	570	572	-	-
HCM Lane V/C Ratio	0.007	-	-	0.126	0.103	0.073	-	-
HCM Control Delay (s)	27.2	-	-	32.1	12	11.8	-	-
HCM Lane LOS	D	-	-	D	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.2	-	-

Intersection												
Int Delay, s/veh	0.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	34	0	0	50	1	573	39	0	2416	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	53	1	610	41	0	2570	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2833	3240	1302	1660	3236	326	2604	0	0	651	0	0
Stage 1	2587	2587	-	632	632	-	-	-	-	-	-	-
Stage 2	246	653	-	1028	2604	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	19	9	130	103	9	572	61	-	-	575	-	-
Stage 1	14	51	-	357	472	-	-	-	-	-	-	-
Stage 2	676	462	-	226	50	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	17	9	130	73	9	572	61	-	-	575	-	-
Mov Cap-2 Maneuver	13	43	-	128	42	-	-	-	-	-	-	-
Stage 1	14	51	-	348	460	-	-	-	-	-	-	-
Stage 2	597	450	-	163	50	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43	11.9	0.7	0
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	61	-	-	130	572	575	-
HCM Lane V/C Ratio	0.017	-	-	0.278	0.093	-	-
HCM Control Delay (s)	65.1	0.6	-	43	11.9	0	-
HCM Lane LOS	F	A	-	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.3	0	-

Intersection												
Int Delay, s/veh	2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	9	0	0	70	5	2059	26	50	1002	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	10	0	0	75	5	2214	28	54	1077	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2082	3439	540	2885	3426	1121	1080	0	0	2242	0	0
Stage 1	1186	1186	-	2239	2239	-	-	-	-	-	-	-
Stage 2	896	2253	-	646	1187	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	6.5	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	42	7	486	11	7	210	641	-	-	94	-	-
Stage 1	196	260	-	26	78	-	-	-	-	-	-	-
Stage 2	280	76	-	414	260	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	15	3	486	6	3	210	641	-	-	94	-	-
Mov Cap-2 Maneuver	15	3	-	6	3	-	-	-	-	-	-	-
Stage 1	194	111	-	26	77	-	-	-	-	-	-	-
Stage 2	178	75	-	173	111	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	31.4	0	4
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	641	-	-	486	210	94	-
HCM Lane V/C Ratio	0.008	-	-	0.02	0.358	0.572	-
HCM Control Delay (s)	10.7	-	-	12.6	31.4	85.3	-
HCM Lane LOS	B	-	-	B	D	F	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.5	2.6	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	67	0	0	61	8	2018	50	0	974	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	72	0	0	66	9	2170	54	0	1047	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1952	3308	543	2633	3300	1112	1086	0	0	2224	0	0
Stage 1	1067	1067	-	2214	2214	-	-	-	-	-	-	-
Stage 2	885	2241	-	419	1086	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	6.9	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	68	8	414	25	8	188	356	-	-	96	-	-
Stage 1	179	297	-	27	80	-	-	-	-	-	-	-
Stage 2	277	78	-	533	291	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	44	8	414	21	8	188	356	-	-	96	-	-
Mov Cap-2 Maneuver	102	59	-	25	59	-	-	-	-	-	-	-
Stage 1	179	297	-	27	80	-	-	-	-	-	-	-
Stage 2	180	78	-	440	291	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	34.1	0.1	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	356	-	-	414	188	96	-
HCM Lane V/C Ratio	0.024	-	-	0.174	0.349	-	-
HCM Control Delay (s)	15.4	0	-	15.5	34.1	0	-
HCM Lane LOS	C	A	-	C	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	1.5	0	-

Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	12	0	0	128	9	1091	44	89	949	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	0	0	131	9	1113	45	91	968	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1617	2330	487	1820	2309	579	973	0	0	1158	0	0
Stage 1	1153	1153	-	1154	1154	-	-	-	-	-	-	-
Stage 2	464	1177	-	666	1155	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	87	37	526	63	38	393	704	-	-	328	-	-
Stage 1	205	270	-	159	270	-	-	-	-	-	-	-
Stage 2	516	263	-	403	269	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	45	26	526	48	27	393	704	-	-	328	-	-
Mov Cap-2 Maneuver	45	26	-	48	27	-	-	-	-	-	-	-
Stage 1	202	195	-	157	267	-	-	-	-	-	-	-
Stage 2	340	260	-	284	194	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	18.7	0.1	1.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	704	-	-	526	393	328	-	-
HCM Lane V/C Ratio	0.013	-	-	0.023	0.332	0.277	-	-
HCM Control Delay (s)	10.2	-	-	12	18.7	20.1	-	-
HCM Lane LOS	B	-	-	B	C	C	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	1.4	1.1	-	-

Intersection												
Int Delay, s/veh	1.5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	74	0	0	114	7	1041	89	0	953	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	75	0	0	115	7	1052	90	0	963	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1411	2132	494	1496	2100	571	989	0	0	1141	0	0
Stage 1	976	976	-	1111	1111	-	-	-	-	-	-	-
Stage 2	435	1156	-	385	989	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	146	49	446	129	51	397	396	-	-	334	-	-
Stage 1	207	327	-	167	283	-	-	-	-	-	-	-
Stage 2	521	269	-	558	323	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	100	47	446	103	48	397	396	-	-	334	-	-
Mov Cap-2 Maneuver	155	152	-	138	154	-	-	-	-	-	-	-
Stage 1	197	327	-	159	269	-	-	-	-	-	-	-
Stage 2	351	256	-	464	323	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.7	17.7	0.3	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	396	-	-	446	397	334	-
HCM Lane V/C Ratio	0.018	-	-	0.168	0.29	-	-
HCM Control Delay (s)	14.3	0.2	-	14.7	17.7	0	-
HCM Lane LOS	B	A	-	B	C	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	1.2	0	-

Intersection												
Int Delay, s/veh	0.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	20	0	0	55	2	625	20	39	2606	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	22	0	0	60	2	679	22	42	2833	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3199	3628	1422	2196	3623	351	2843	0	0	701	0	0
Stage 1	2923	2923	-	695	695	-	-	-	-	-	-	-
Stage 2	276	705	-	1501	2928	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.6	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	7	5	144	35	5	551	131	-	-	544	-	-
Stage 1	15	34	-	332	442	-	-	-	-	-	-	-
Stage 2	671	437	-	125	34	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	6	5	144	28	5	551	131	-	-	544	-	-
Mov Cap-2 Maneuver	6	5	-	28	5	-	-	-	-	-	-	-
Stage 1	15	31	-	327	435	-	-	-	-	-	-	-
Stage 2	589	430	-	98	31	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.4	12.3	0.1	0.2
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	131	-	-	144	551	544	-
HCM Lane V/C Ratio	0.017	-	-	0.151	0.108	0.078	-
HCM Control Delay (s)	32.9	-	-	34.4	12.3	12.2	-
HCM Lane LOS	D	-	-	D	B	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.4	0.3	-

Intersection												
Int Delay, s/veh	1.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	40	0	0	50	2	604	39	0	2586	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	43	0	0	54	2	657	42	0	2811	38

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	3097	3533	1424	1806	3531	349	2849	0	0	699	0	0
Stage 1	2830	2830	-	682	682	-	-	-	-	-	-	-
Stage 2	267	703	-	1124	2849	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	13	6	107	84	6	552	45	-	-	545	-	-
Stage 1	9	38	-	330	448	-	-	-	-	-	-	-
Stage 2	656	438	-	197	37	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	11	6	107	47	6	552	45	-	-	545	-	-
Mov Cap-2 Maneuver	7	33	-	92	30	-	-	-	-	-	-	-
Stage 1	8	38	-	306	415	-	-	-	-	-	-	-
Stage 2	548	406	-	117	37	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	60	12.2	2.2	0
HCM LOS	F	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	45	-	-	107	552	545	-	-
HCM Lane V/C Ratio	0.048	-	-	0.406	0.098	-	-	-
HCM Control Delay (s)	89	2.1	-	60	12.2	0	-	-
HCM Lane LOS	F	A	-	F	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.7	0.3	0	-	-

Intersection												
Int Delay, s/veh	2.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	15	0	0	70	10	2183	26	50	1057	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	16	0	0	76	11	2373	28	54	1149	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2231	3683	577	3092	3672	1201	1154	0	0	2401	0	0
Stage 1	1260	1260	-	2409	2409	-	-	-	-	-	-	-
Stage 2	971	2423	-	683	1263	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	6.4	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	33	5	460	8	5	195	601	-	-	78	-	-
Stage 1	177	240	-	19	63	-	-	-	-	-	-	-
Stage 2	251	62	-	394	239	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	9	2	460	3	2	195	601	-	-	78	-	-
Mov Cap-2 Maneuver	9	2	-	3	2	-	-	-	-	-	-	-
Stage 1	174	74	-	19	62	-	-	-	-	-	-	-
Stage 2	150	61	-	117	74	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.1	34.8	0.1	5.5
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	601	-	-	460	195	78	-
HCM Lane V/C Ratio	0.018	-	-	0.035	0.39	0.697	-
HCM Control Delay (s)	11.1	-	-	13.1	34.8	121.2	-
HCM Lane LOS	B	-	-	B	D	F	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	1.7	3.3	-

Intersection

Int Delay, s/veh 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	70	0	0	61	10	2148	50	0	1027	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	76	0	0	66	11	2335	54	0	1116	43

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2094	3549	580	2831	3544	1195	1160	0	0	2389	0	0
Stage 1	1138	1138	-	2384	2384	-	-	-	-	-	-	-
Stage 2	956	2411	-	447	1160	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	6.6	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.8	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	55	6	392	19	6	186	327	-	-	79	-	-
Stage 1	159	275	-	20	65	-	-	-	-	-	-	-
Stage 2	250	63	-	513	268	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	35	6	392	15	6	186	327	-	-	79	-	-
Mov Cap-2 Maneuver	89	48	-	18	49	-	-	-	-	-	-	-
Stage 1	159	275	-	20	65	-	-	-	-	-	-	-
Stage 2	161	63	-	413	268	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.4	34.7	0.1	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	327	-	-	392	186	79	-	-
HCM Lane V/C Ratio	0.033	-	-	0.194	0.356	-	-	-
HCM Control Delay (s)	16.4	0	-	16.4	34.7	0	-	-
HCM Lane LOS	C	A	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	1.5	0	-	-

Intersection												
Int Delay, s/veh	2.2											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	14	0	0	128	10	1141	44	89	978	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	0	139	11	1240	48	97	1063	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1778	2570	535	2011	2549	644	1070	0	0	1288	0	0
Stage 1	1260	1260	-	1286	1286	-	-	-	-	-	-	-
Stage 2	518	1310	-	725	1263	-	-	-	-	-	-	-
Critical Hdwy	6.99	6.54	6.94	6.99	6.54	7.14	4.14	-	-	5.34	-	-
Critical Hdwy Stg 1	6.54	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4.02	3.32	3.67	4.02	3.92	2.22	-	-	3.12	-	-
Pot Cap-1 Maneuver	67	26	490	47	26	356	647	-	-	283	-	-
Stage 1	177	240	-	128	233	-	-	-	-	-	-	-
Stage 2	479	227	-	372	239	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	30	17	490	33	17	356	647	-	-	283	-	-
Mov Cap-2 Maneuver	30	17	-	33	17	-	-	-	-	-	-	-
Stage 1	174	158	-	126	229	-	-	-	-	-	-	-
Stage 2	287	223	-	237	157	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	21.5	0.1	2
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	647	-	-	490	356	283	-
HCM Lane V/C Ratio	0.017	-	-	0.031	0.391	0.342	-
HCM Control Delay (s)	10.7	-	-	12.6	21.5	24.2	-
HCM Lane LOS	B	-	-	B	C	C	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	1.8	1.5	-

Intersection												
Int Delay, s/veh	1.8											

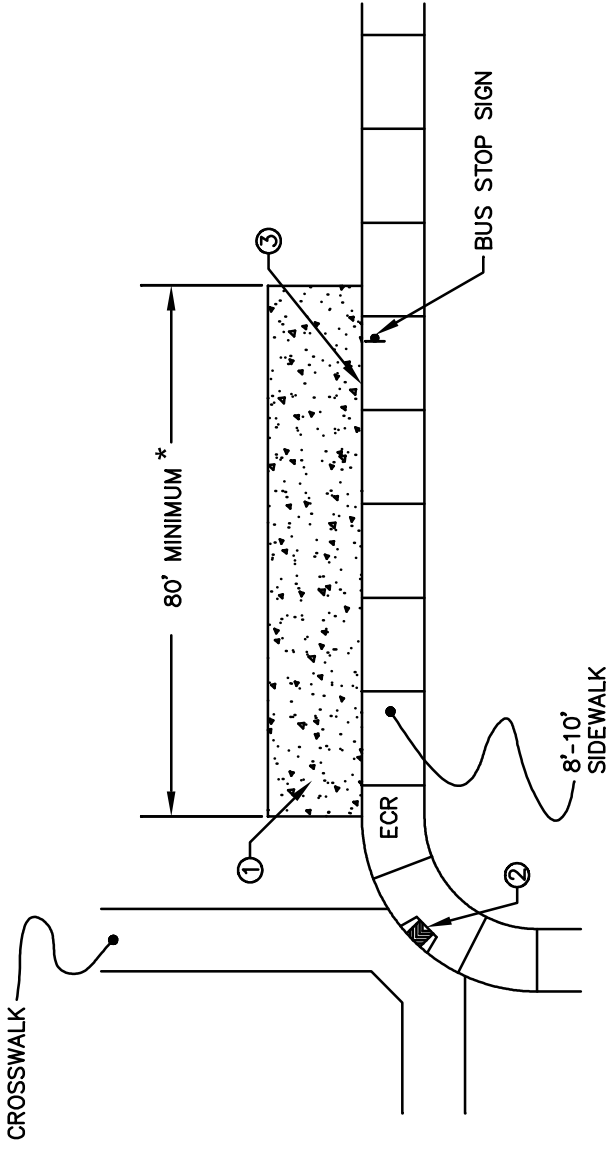
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	0	0	81	0	0	114	8	1090	89	0	982	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	88	0	0	124	9	1185	97	0	1067	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1574	2382	549	1678	2349	641	1098	0	0	1282	0	0
Stage 1	1083	1083	-	1251	1251	-	-	-	-	-	-	-
Stage 2	491	1299	-	427	1098	-	-	-	-	-	-	-
Critical Hdwy	6.44	6.54	7.14	6.44	6.54	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	7.34	5.54	-	7.34	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.74	5.54	-	6.74	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.82	4.02	3.92	3.82	4.02	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	116	34	411	100	36	358	351	-	-	285	-	-
Stage 1	174	292	-	133	242	-	-	-	-	-	-	-
Stage 2	482	230	-	527	287	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	71	31	411	73	33	358	351	-	-	285	-	-
Mov Cap-2 Maneuver	121	125	-	105	127	-	-	-	-	-	-	-
Stage 1	158	292	-	121	220	-	-	-	-	-	-	-
Stage 2	286	209	-	414	287	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	20.3	0.6	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	351	-	-	411	358	285	-	-
HCM Lane V/C Ratio	0.025	-	-	0.214	0.346	-	-	-
HCM Control Delay (s)	15.5	0.5	-	16.1	20.3	0	-	-
HCM Lane LOS	C	A	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	1.5	0	-	-

Appendix O – Bus Stop Dimensions

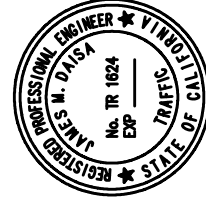


NOTES:

- ① 12' TO 14' WIDE CONCRETE BUS PAD INCLUDING MONOLITHIC CURB - 9" DEEP WITHOUT RE-BAR, OR 8" DEEP WITH #3 RE-BAR AT 18" ON CENTER. EXACT PAD PLACEMENT WILL VARY BY LOCATION. CONTACT OCTA BEFORE PLACING PAD.
- ② WHEELCHAIR ACCESS RAMP (LOCATION MAY VARY).
- ③ WHENEVER POSSIBLE DRIVEWAYS SHOULD NOT BE PLACED WITHIN THE TURNOUT/BUS ZONE.

* DIMENSIONS FOR A BUS PAD USED BY MULTIPLE BUSES:

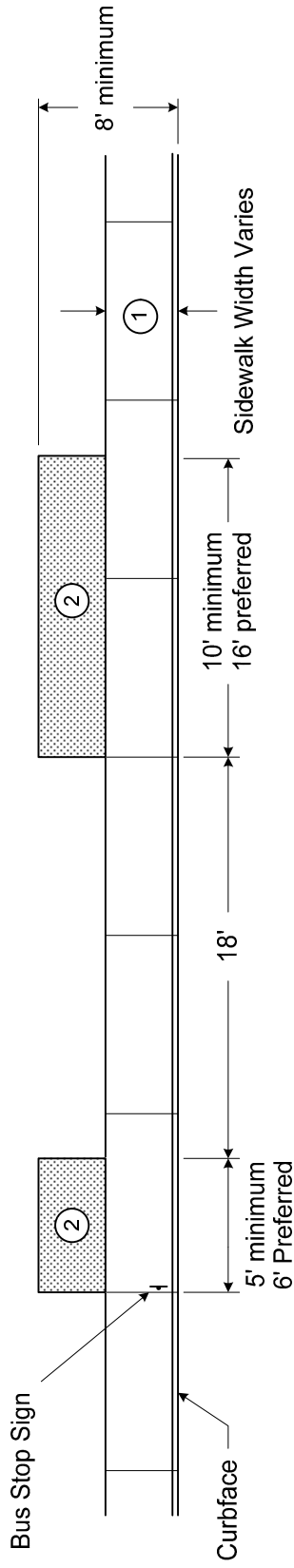
- ADD 60' FOR EACH ADDITIONAL PASS-THROUGH BUS.
- IF BUS STOP WILL BE USED AS A LAYOVER ZONE, ADD AN ADDITIONAL 80' (100' FOR ARTICULATED BUSES).



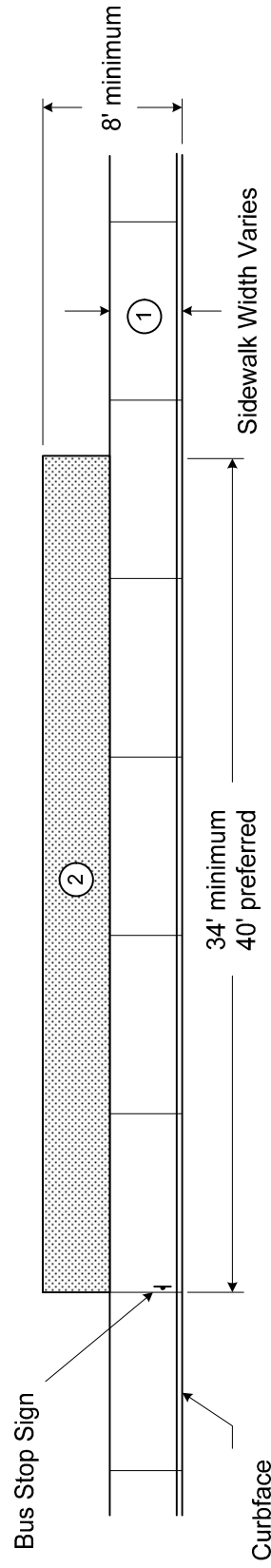
**ORANGE COUNTY
TRANSPORTATION AUTHORITY**

FIGURE 22
STANDARD CONCRETE BUS PAD DESIGN

Minimum Boarding Area

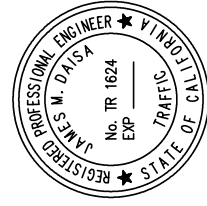


Preferred Boarding Area



Note:

- 1) The minimum sidewalk/pathway width should be 48" wide, with a 84" vertical clearance.
- 2) When the existing sidewalk is less than 8 feet wide, it should be widened accordingly to meet current ADA standards for accommodating both a front and rear door wheelchair lift. Wheelchair boarding areas should be constructed with either P.C.C. or A.C. pavement. Above grade obstacles, or street furniture should be placed in such a manner as to not interfere with the designated front of rear door boarding areas.



- A sponsor (such as a business or community group, or local jurisdiction) steps forward to take maintenance responsibility, and;
- The receptacle can be located within close proximity to the bus stop.

The Authority relies on the private sector and local jurisdictions to provide benches and, in some cases, trash receptacles. Developers and local jurisdictions may design a special style of bench to fit into the landscape and complement the architectural style of their project or streetscape. They can also contact private bench advertising companies which will provide benches for free. **Figures 25, 25A, and 25B** show typical bench and trash receptacle placements in relation to the passenger boarding area. Placement of benches and receptacles must maintain proper clearances for passage and wheelchair boarding areas.

While bench designs vary among manufacturers, some standards do exist. Benches usually seat three (3) to four (4) people and may have an upright back support. Some bench designs come with a D metal bar in the center of the bench to discourage sleeping on the bench for a prolonged period of time. **Figure 26** illustrates a “park” style bench with a back support.

3.5 SHELTER DESIGN

Passenger shelters are provided to enhance the safety, security and comfort of transit patrons. Shelters can be provided in many ways and can take almost any form or appearance since local agencies typically select and install their own shelters. Most often, passenger shelters are free

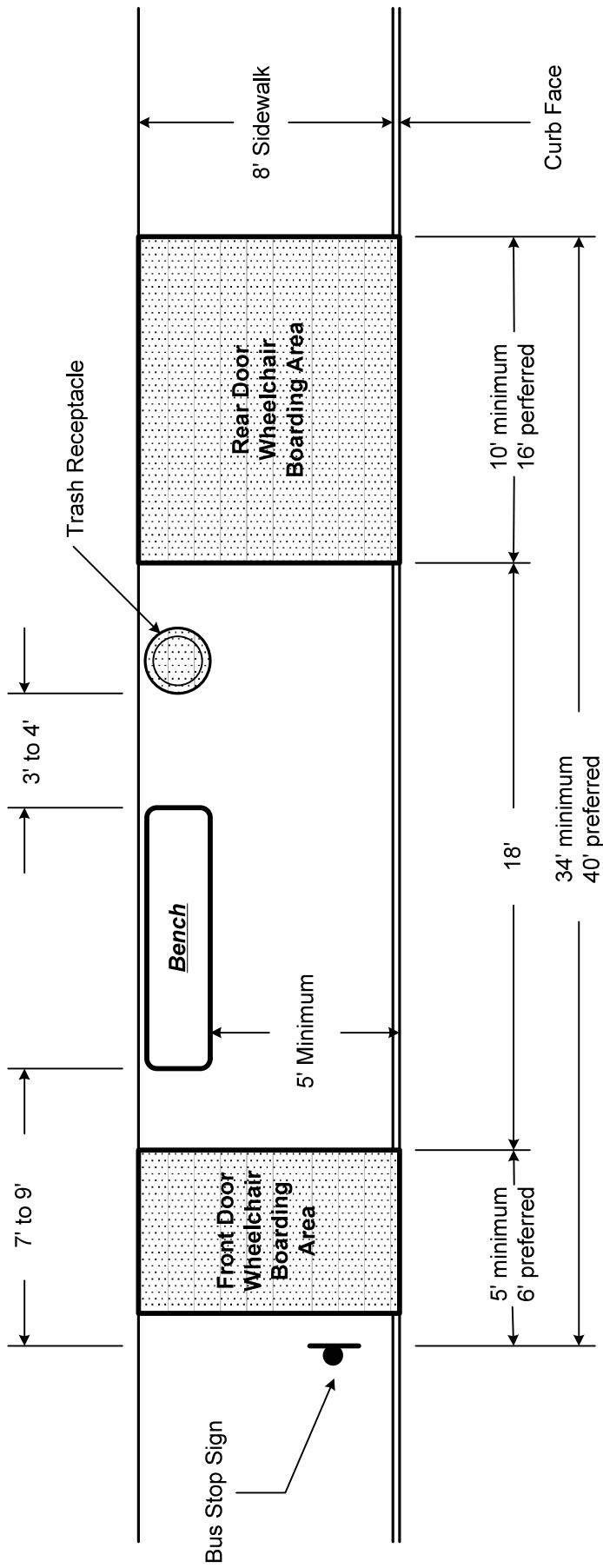


Photo 11: Bus stop with shelter.

standing structures (see Photo 9), but sometimes they are incorporated into adjacent buildings.

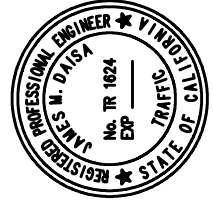
The guidelines presented in this section are most applicable to free standing structures. When considering the placement of passenger shelters, each jurisdiction should evaluate the following:

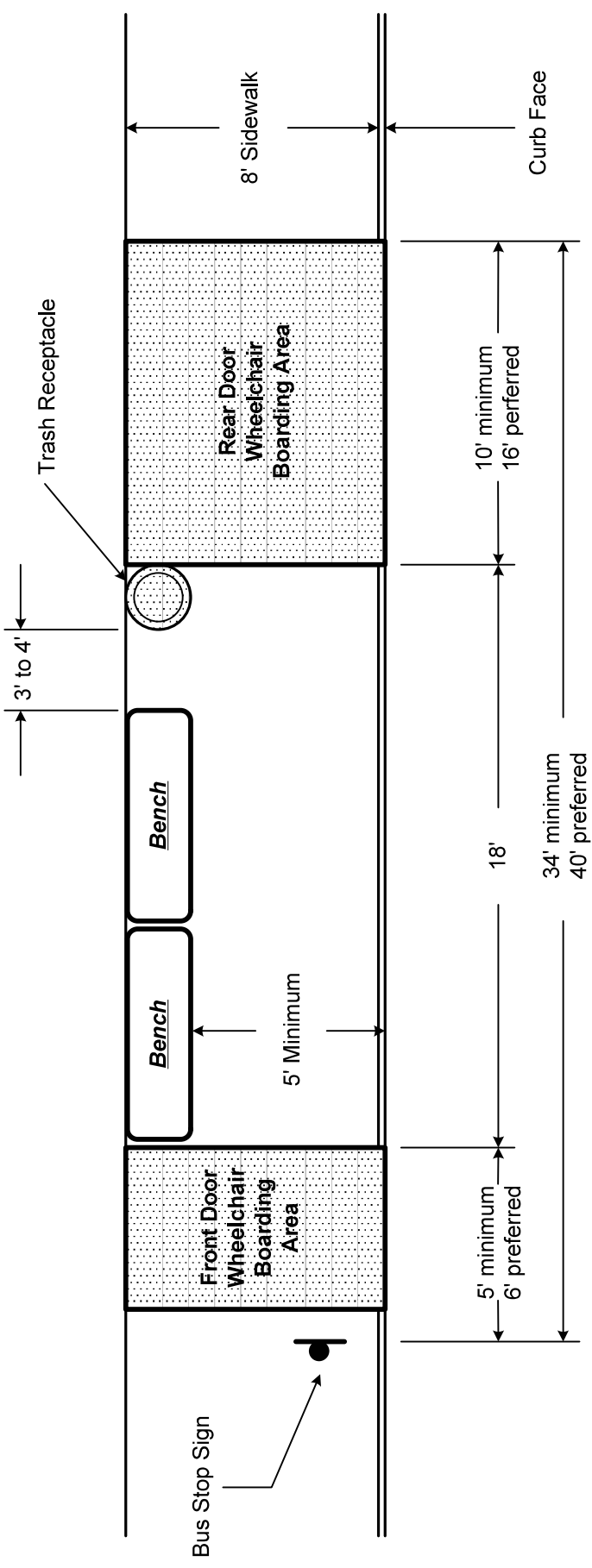
- Type and intensity of adjacent land uses.
 - Sidewalk condition at the bus stop and access to and from the stop.
-
- Location of doors/wheelchair lifts on OCTA buses.
 - Visibility of the shelter and visibility impacts of the shelter. Ensuring shelter is located where it will not impede sight lines from nearby streets and driveways.
 - Location of other street furniture, avoiding crowding of street furniture and ensuring ample waiting space around shelter.
 - Ensure location has appropriate drainage and water does not pool near shelter.



NOTE:

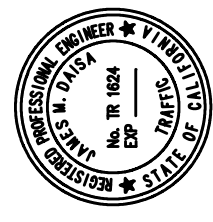
- 1) The bench should be placed between 7' to 9' from the bus stop sign, on the back side of the sidewalk. Two benches can be placed as long as they do not obstruct the front and rear wheelchair boarding areas.
- 2) Both front door and rear door wheelchair boarding areas need to be free of **all** above ground obstacles. This includes street furniture (benches/shelters), trash receptacles, treewells, utility poles, light standards, mail boxes, miscellaneous signs, newsracks, etc.
- 3) Trash receptacles can be placed on either side of the bench, but should be placed at least 3' - 4' from the bench.

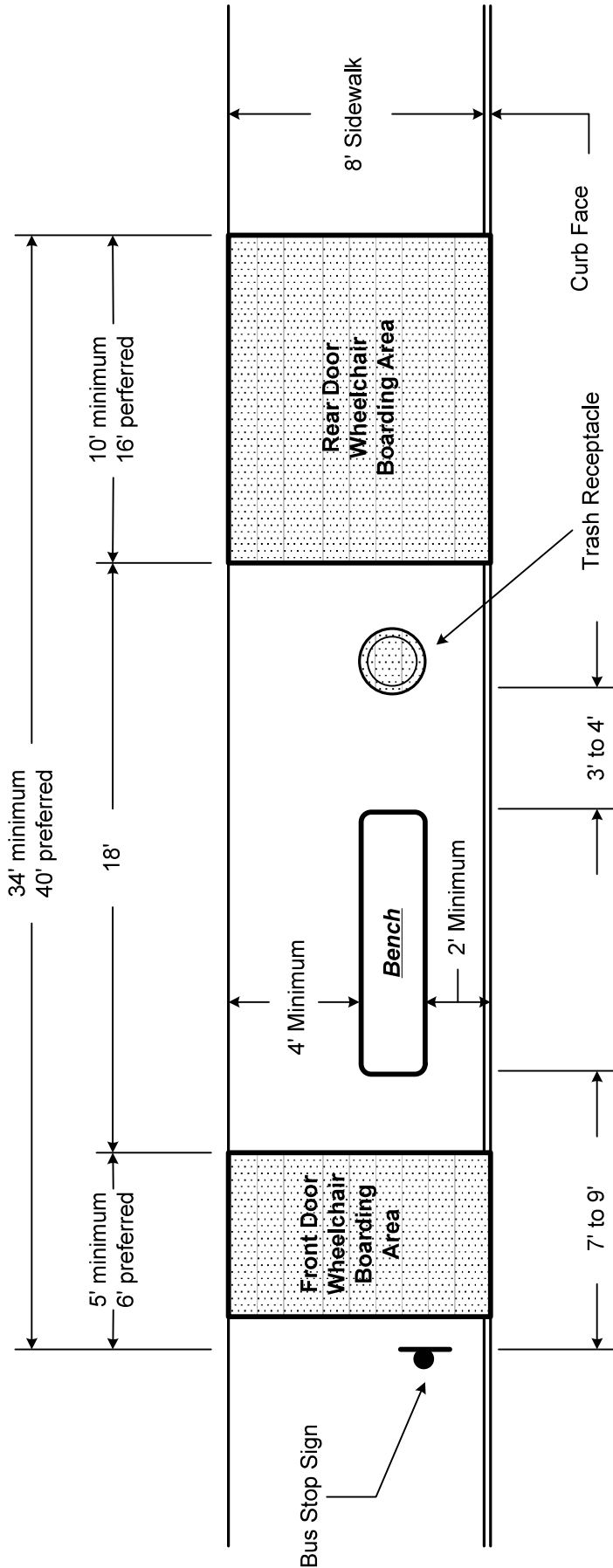




NOTE:

- 1) Two benches can be placed as long as they do not obstruct the front and rear wheelchair boarding areas.
- 2) Both front door and rear door wheelchair boarding areas need to be free of **all** above ground obstacles. This includes street furniture (benches/shelters), trash receptacles, treewells, utility poles, light standards, mail boxes, miscellaneous signs, newsracks, etc.
- 3) Trash receptacles can be placed on either side of the bench, but should be placed at least 3' to 4' from the bench.

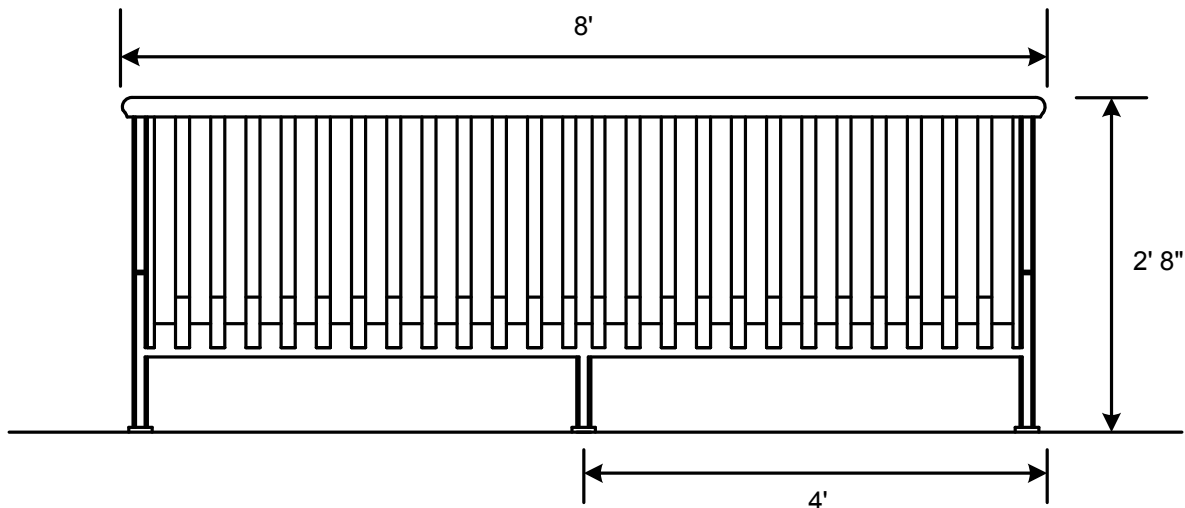




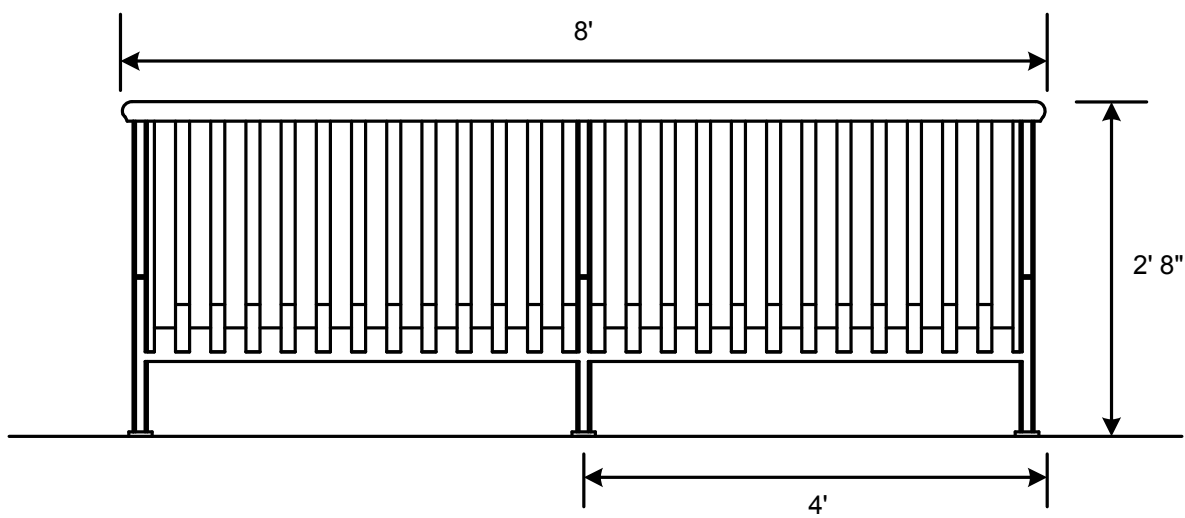
NOTE:

- 1) The bench should be placed between 7' to 9' from the bus stop sign, and a minimum of 2' back from the curb face. Two benches can be placed as long as they do not obstruct the front and rear wheelchair boarding areas.
- 2) Both front door and rear door wheelchair boarding areas need to be free of **all** above ground obstacles. This includes street furniture (benches/shelters), trash receptacles, treewells, utility poles, light standards, mail boxes, miscellaneous signs, newstracks, etc.
- 3) Trash receptacles can be placed on either side of the bench, but should be placed at least 3' to 4' from the bench.

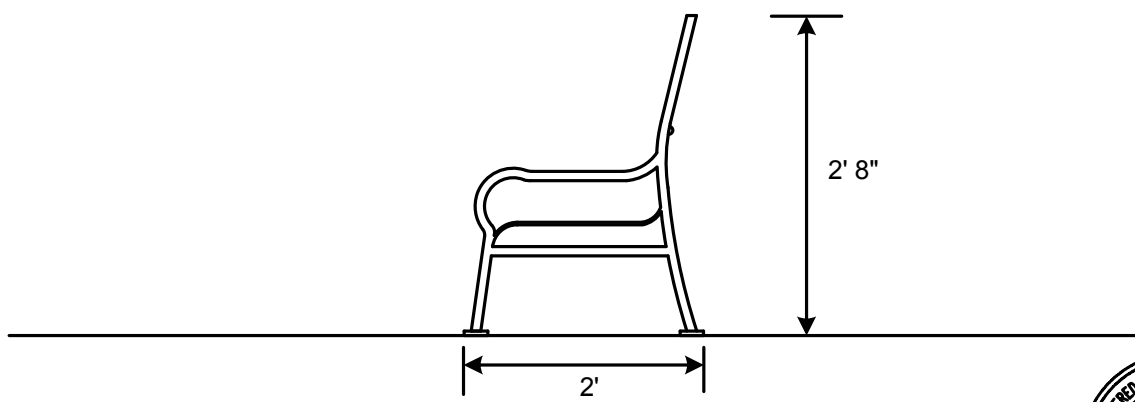




FRONT VIEW - BENCH WITHOUT CENTER ARM



FRONT VIEW - BENCH WITH CENTER ARM



SIDE VIEW



- The availability of electrical service.
- The availability of necessary right-of-way and/or the ability of adjacent property owner to dedicate the necessary right-of-way.
- Accessibility for elderly and mobility impaired persons (See Chapter 7 for ADA requirements).

The following design and placement criteria will assist local agencies after it has been determined a shelter will be placed at an existing bus stop:

- All requirements under "General Site Design" (see below) and "Bench and Trash Receptacle Design" should be met.
- Minimum overhead canopy of 72 square feet with a minimum width of 6 feet is desired.
- Minimum 7.5 feet clearance between underside of roof and sidewalk surface is desired.
- Minimum two feet clearance between overhead canopy and curb face is required.



Photo 12: Multiple shelter bus stop.

- Shelter canopy should be waterproof with provisions for drainage away from waiting passengers and boarding area.
- Shelter should have owner's name and 24-hour telephone number displayed for emergency purposes.
- Seating for at least four people located under the shelter canopy is desired.
- A minimum space of 36 inches by 48 inches of clear floor space for people in wheelchairs is required within the shelter per ADA regulations.
- For passenger comfort and convenience, a minimum lighting level of two footcandles is required throughout the shelter.
- Accessories to be added to the transit shelter and passenger boarding area (such as telephone, water fountain, additional information panels, etc.) are a decision for the individual agency responsible for the shelter. Each item can be weighed to balance the concerns for greater passenger comfort and convenience versus concerns for security, maintenance and cost.
- The shelter should be located in reasonably close proximity to where the front door of the bus will open to facilitate timely passenger loading.



Photo 13: Typical shelter design on narrow sidewalk.

- Shelter screens should keep a minimum 6 inches vertical clearance from sidewalk to avoid collection of trash and debris.
- The back of the shelter should be located at least 12 inches from a building face, wall, or other broad vertical surfaces to facilitate trash removal and panel cleaning.
- Shelters should not be placed between a regularly used building exit and the curb so that pedestrians retain direct access to the street from the building.

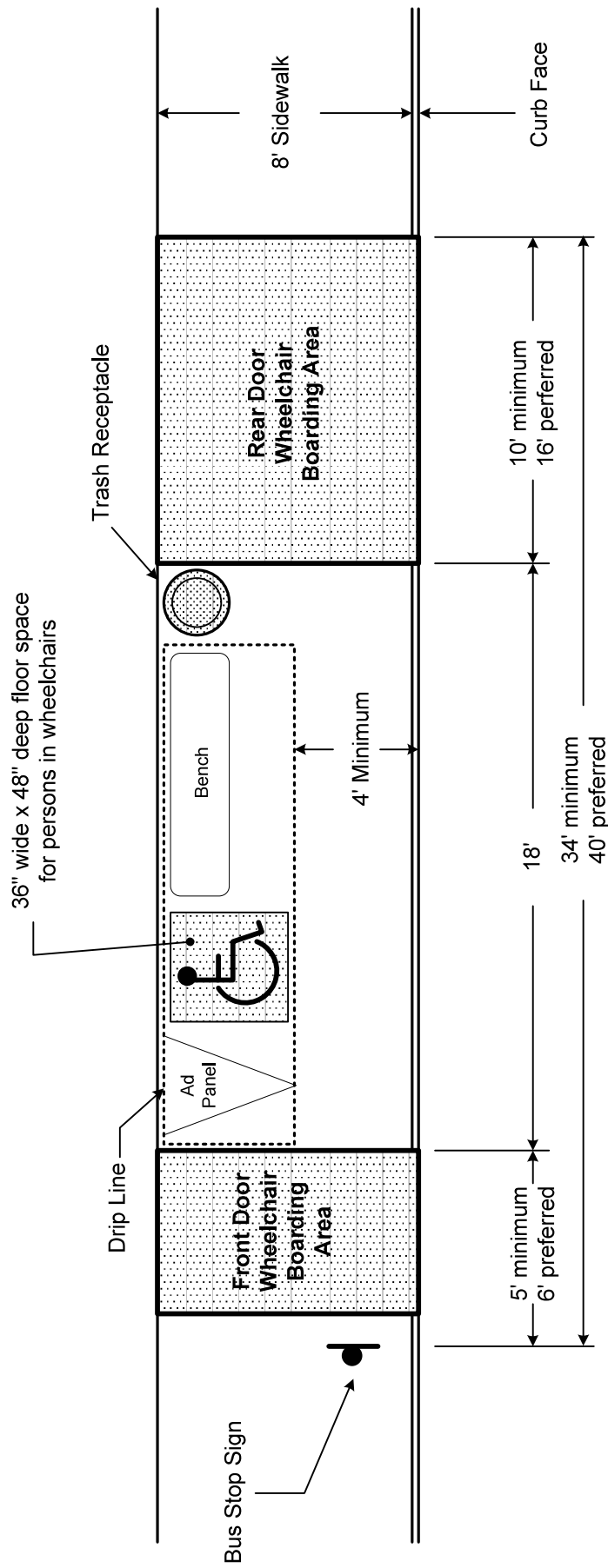
- Whenever possible, do not place shelters in front of building windows used for commercial purposes (e.g. advertising, display, business names, etc.).
- Shelters should be located to avoid exposing persons to splashing water from passing vehicles and runoff from adjacent buildings and landscaping.
- Shelters should be located so that their orientation provides as much protection as possible from wind and rain, and with consideration of the sun's angles to allow maximum shade during peak use in the morning and afternoon.

Photo 12 shows illustrates the layout of a multiple shelter bus stop, while Photo 13 shows how a shelter can be installed on a narrow sidewalk. See **Figures 27, 27A and 27B** for typical placement of a shelter at a bus stop under various shelter and bench configurations, and **Figure 28** for a typical passenger shelter design.

3.6 GENERAL SITE DESIGN

Every bus stop should include the following minimum elements for passenger safety and comfort:

- A farside bus stop sign should be located between 80 feet and 100 feet from point of tangency of the intersection. A nearside bus stop sign should have a minimum clearance of 40 feet from point of tangency of the intersection. The greater the distance between the bus stop and the intersection crossing, the greater the possibility of jay-walking.

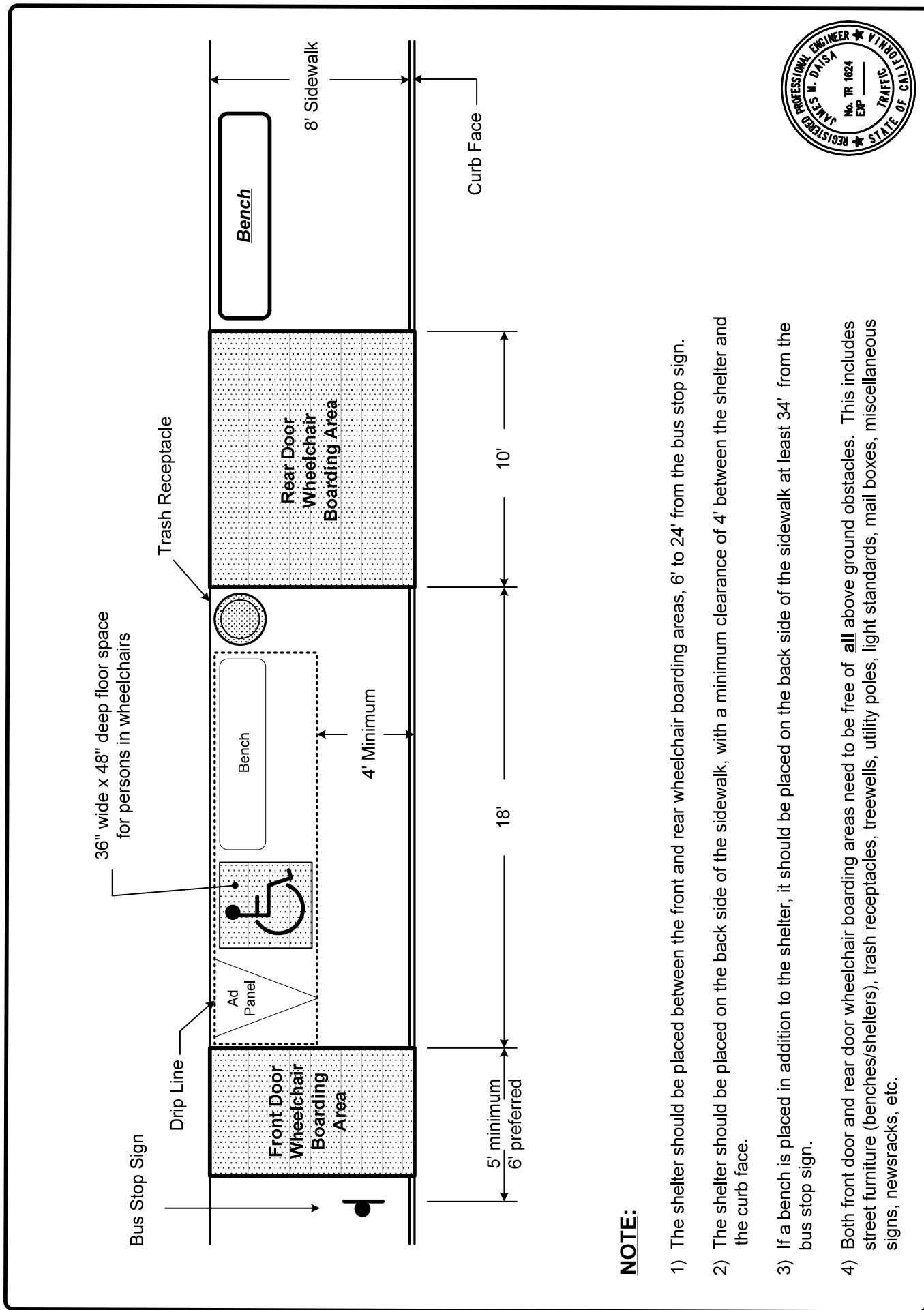


NOTE:

- 1) The shelter should be placed between the front and rear wheelchair boarding areas, 6' to 24' from the bus stop sign.
- 2) The shelter should be placed on the back side of the sidewalk, with a minimum clearance of 4' between the shelter and the curb face.
- 3) Both front door and rear door wheelchair boarding areas need to be free of **all** above ground obstacles. This includes street furniture (benches/shelters), trash receptacles, treewells, utility poles, light standards, mail boxes, miscellaneous signs, newsracks, etc.



FIGURE 27
TYPICAL SHELTER PLACEMENT - 8 FOOT WIDE SIDEWALK



NOTE:

- 1) The shelter should be placed between the front and rear wheelchair boarding areas, 6' to 24' from the bus stop sign.
- 2) The shelter should be placed on the back side of the sidewalk, with a minimum clearance of 4' between the shelter and the curb face.
- 3) If a bench is placed in addition to the shelter, it should be placed on the back side of the sidewalk at least 34' from the bus stop sign.
- 4) Both front door and rear door wheelchair boarding areas need to be free of **all** above ground obstacles. This includes street furniture (benches/shelters), trash receptacles, treewells, utility poles, light standards, mail boxes, miscellaneous signs, newsracks, etc.

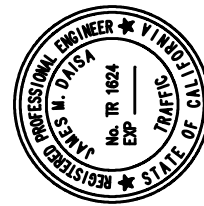
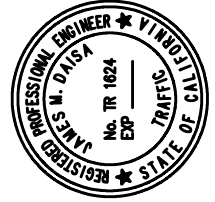
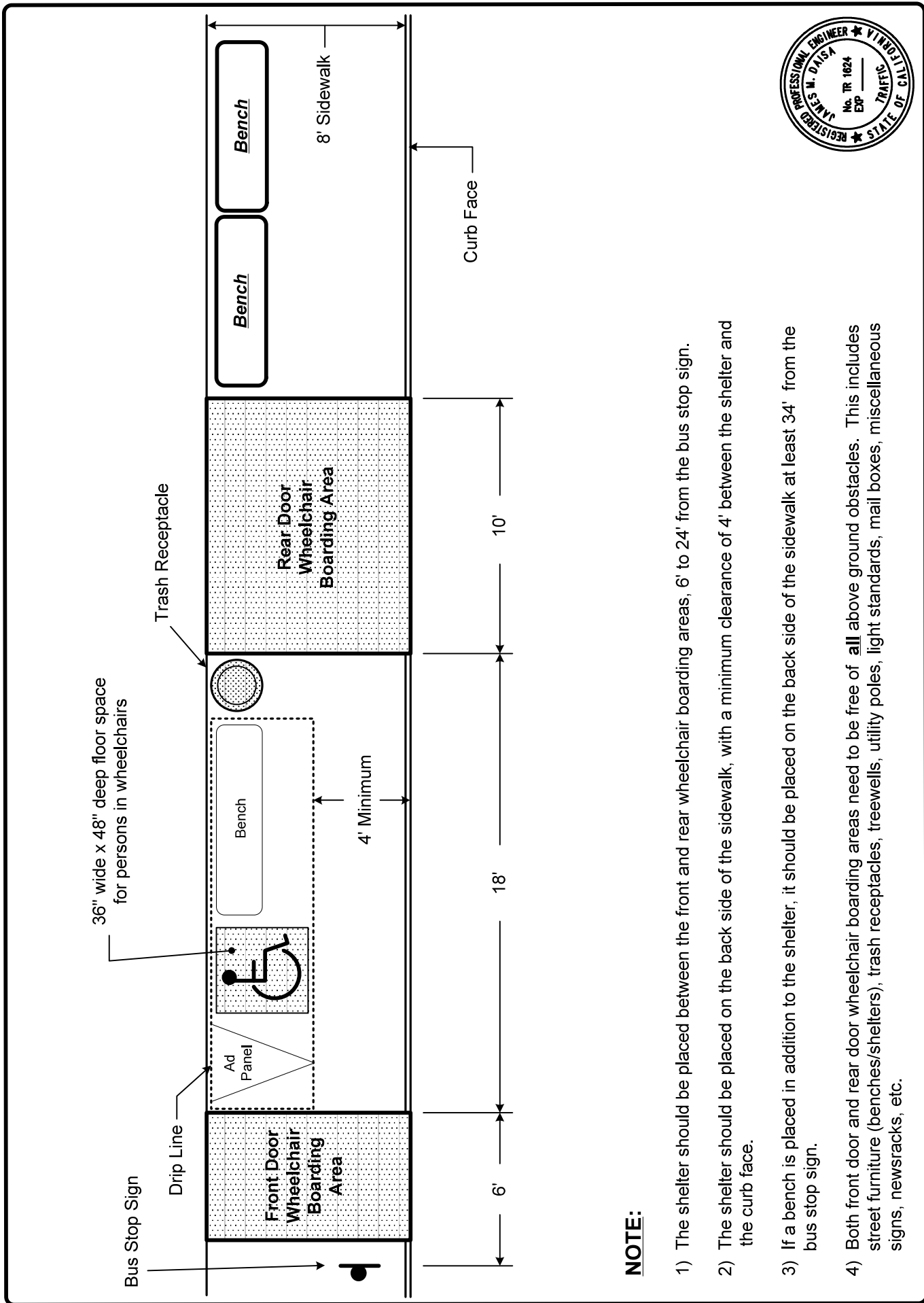


FIGURE 27A
TYPICAL SHELTER/BENCH PLACEMENT - 8 FOOT WIDE SIDEWALK



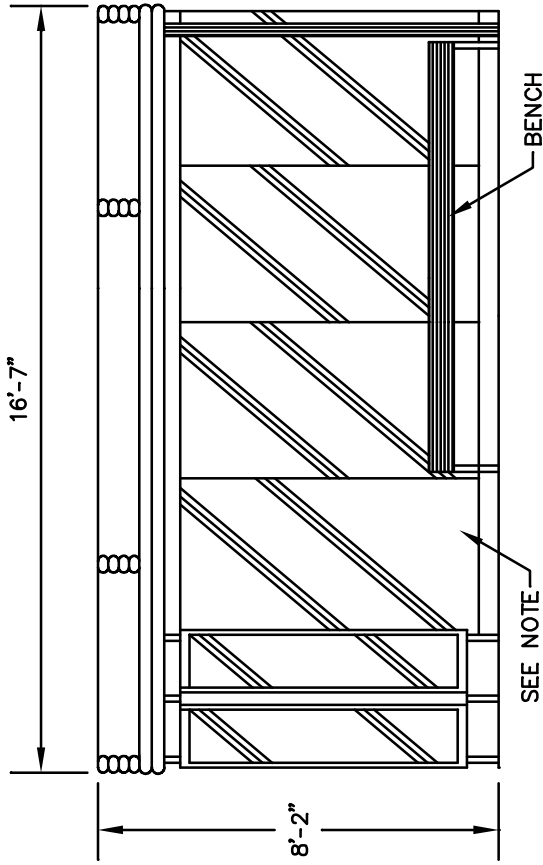


NOTE:

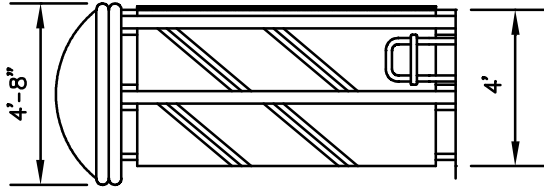
- 1) The shelter should be placed between the front and rear wheelchair boarding areas, 6' to 24' from the bus stop sign.
- 2) The shelter should be placed on the back side of the sidewalk, with a minimum clearance of 4' between the shelter and the curb face.
- 3) If a bench is placed in addition to the shelter, it should be placed on the back side of the sidewalk at least 34' from the bus stop sign.
- 4) Both front door and rear door wheelchair boarding areas need to be free of **all** above ground obstacles. This includes street furniture (benches/shelters), trash receptacles, treewells, utility poles, light standards, mail boxes, miscellaneous signs, newstracks, etc.



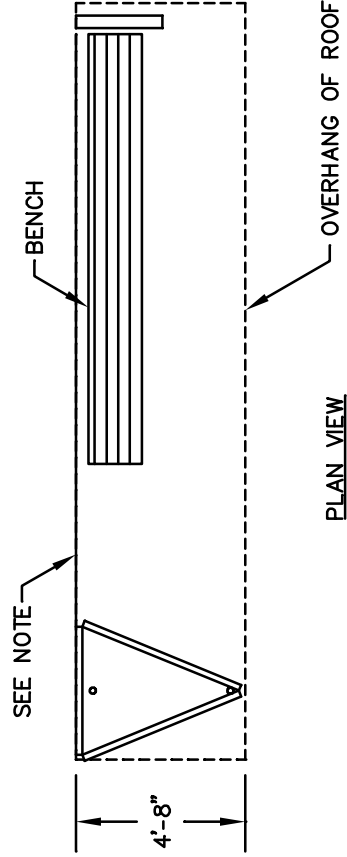
FIGURE 27B
TYPICAL SHELTER/MULTIPLE BENCH PLACEMENT - 8 FOOT WIDE SIDEWALK



FRONT ELEVATION

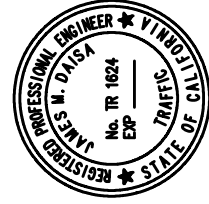


RIGHT SIDE ELEVATION



PLAN VIEW

NOTE: LEFT-MOST REAR GLASS PANEL MAY BE REMOVED IF ACCESS FROM THE REAR OF THE SHELTER IS REQUIRED.



- In a separated sidewalk situation (e.g. parkway between curb and sidewalk):
 1. Provide a landing area adjacent to the curb for a minimum distance of 34 feet in length and a minimum of 8 feet in depth (see **Figure 24A**); and
 2. Provide a connecting pathway from sidewalk to landing area (see **Figure 24B**).
- Provide convenient pedestrian pathways/access ways to and from adjacent buildings.
- Locate the bus stop to allow coach operators clear visibility of passengers and to allow passengers a view of the oncoming bus.

- Driveways should be kept at a minimum in and adjacent to the bus stop area.
- Street furniture over 2-1/2 feet high should be located in such a way to provide motorists exiting nearby driveways clear visibility of the street.
- Passenger boarding area: Pads must have a smooth broom finished surface to accommodate high heels and wheelchairs and must have high strength capacity to bear the weight of a shelter.



Photo 14: Typical shelter and trash receptacle layout.

- Approved pavers (textured/decorative tiles) can be used in combination with the concrete pad to provide a pleasing aesthetic and architectural balance. Slope of pad should match slope of adjacent sidewalk and allow drainage of pad (2% maximum per ADA regulations).
- Landscaping near the passenger boarding area is encouraged to maximize passenger comfort, but far enough back from curb face as not to interfere with the bus. All landscaping should be carefully located so as not to obstruct the shelter canopy or obscure sight lines at the stop. Shade trees are desirable and the preferred location is at back of sidewalk.
- All street furniture should maintain a minimum of 48 inches of horizontal clearance wherever possible for access and maintenance between components and switch boxes, mail boxes, etc. Photo 14 illustrates a typical layout of a shelter and other street furniture.
- Maintain minimum 5 feet clearance between components and fire hydrants.
- Locate bus stops where there is a standard curb in good condition. Bus stops are designed with the assumption that the bus is the first step. It is more difficult for the elderly and mobility impaired passengers if the curb is absent or damaged.

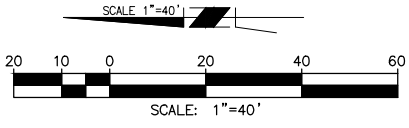
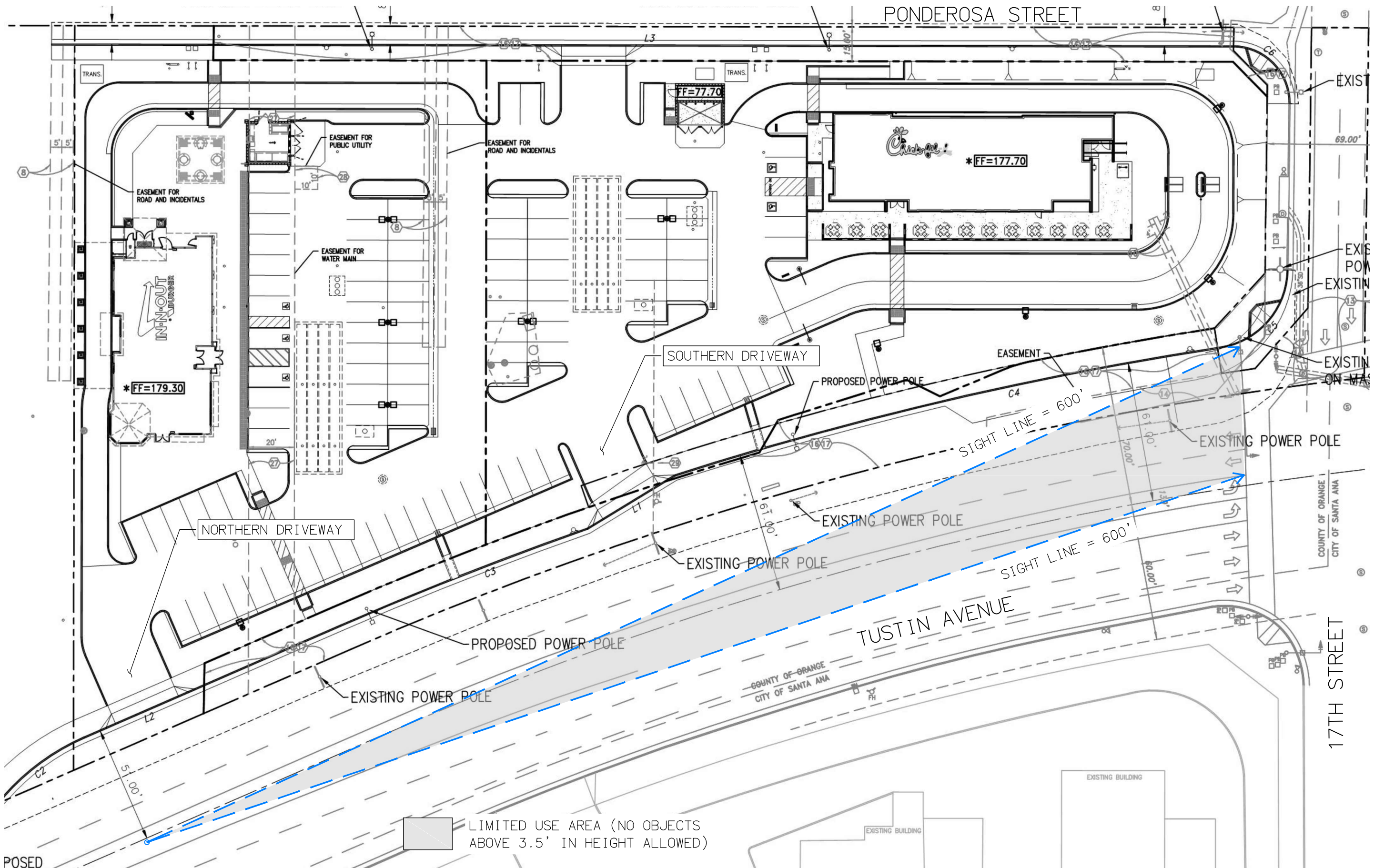
- Ensure a minimum clearance distance of 10 feet between a pedestrian crosswalk and the front or rear of a bus at a bus stop.
- Whenever possible, avoid placing a bus stop such that the bus' wheels will cross over a catch basin as it pulls to the curb causing the bus to lurch and possibly throw off passenger balance. Additionally, it could eventually cause excessive settlement of the catch basin's structure.
- In rural or undeveloped areas, avoid placing bus stops adjacent to drainage ditches or uneven slopes. In these areas, every effort should be made to find a flat level area in which to place the stop. If funding is available, a concrete or asphalt passenger pad, up to 8 feet wide and 35 feet in length, should be placed. Curb ramps and a compacted and stabilized decomposed granite, asphalt, or concrete pathway to the nearest intersection or development should also be considered. If possible, construct an appropriate platform over drainage ditches to serve as a waiting area (see Section 2.12 on rural bus stops).
- Whenever possible, a bus stop should not be located adjacent to a long term construction zone. The local jurisdiction should ensure that a proper platform and access way is maintained or be required to move the bus stop temporarily to a nearby location that allows safe boarding and deboarding (see Chapter 5 for construction zone guidelines).

Passenger Security

Pedestrian security is one of the primary issues associated with the design of bus stops. Personal security is consistently mentioned in transit studies as a major concern among transit users. The following guidelines should be considered to improve passenger security:

- Place bus stop in locations providing between two to five footcandles of illumination within the bus stop area. If street lighting does not exist, solar lighting could be considered to enhance security at night.
- If possible, ensure adjacent shrubbery is trimmed low and thinned so passengers can view over and behind hedges. Consider using plants that are open and do not form solid hedges of vegetation.
- Ensure clear visibility of, through, and around the bus stop for both passenger surveillance of environment and for police surveillance. Provide adequate lines of sight as passengers and police approach the bus stop.
- If possible, ensure that the pedestrian circulation routes through bus stops and waiting areas are not blocked from view by walls or other structures.
- In placing bus stops avoid nearby edges and corners of walls that create blind spots.
- If possible, avoid design features that degrade access and security including sound-walls or similar structures that isolate passengers from surrounding neighborhoods. In general, there is no reason to locate bus stops adjacent to sound walls or tall fences, as these locations preclude direct access from adjacent land uses. If unavoidable, provide a pedestrian access-way through the wall.

Appendix P – Line of Sight Analysis



LIMITED USE AREA (NO OBJECTS ABOVE 3.5' IN HEIGHT ALLOWED)

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CHICK-FIL-A AND IN-N-OUT
17TH ST AND TUSTIN AVE
 LINE OF SIGHT DISTANCE

H:\PDATA\151800\TRAFFIC\EXHIBIT\CFA_INO17TH_TUSTIN.DWG ALDRIN.DORADO 11/9/17 1:23 pm

H:\PDATA\151800\TRAFFIC\CAD\EXHIBIT\CFA_17TH_TUSTIN_2.DWG ALDRIN.DORADO 11/9/17 1:13 pm

